COMMONWEALTH BUREAU OF ANIMAL HEALTH

THE

VETERINARY BULLETIN

Vol. 24] June, 1954 [No. 6

DISEASES CAUSED BY BACTERIA AND FUNGI

ARTIOLI, D. (1953). Prime osservazioni su ruolo sostenuto dagli stafilococchi enterotossici nella diarrea dei vitelli. **[Experimental reproduction of diarrhoea in calves by the administration of enterotoxin - producing staphylococci.]**—*Atti Soc. ital. Sci. vet., Sanremo*, 1952. **6**, pp. 646-648. [English and German summaries.] 1734

Severe losses were caused in the province of Parma by scours, due to enterotoxin-producing staphylococci, in calves 15–40 days old. A similar clinical picture was set up in 2 calves, 15 and 20 days old, by the administration of broth cultures of an enterotoxin-producing staphylococcus isolated from an outbreak of food poisoning in human beings.—I. MARTINI.

SMITH, I. M. (1954). **The detection of agglutinins to *Str. agalactiae* strains using a milk ring test.**—*J. comp. Path.* **64**, 1-4. [Author's summary modified.] 1735

S. described a milk ring test, using a haematoxylin stained antigen of *Str. agalactiae* strain S 13. The test detected agglutinins in the milk of five cows experimentally infected with strain S 13, and was not inferior to a whey slide agglutination test for this purpose.

When compared with standard brucella ring test antigen the streptococcal antigen appeared to be species-specific.

KRÜGER, W. (1953). Über die Variabilität der Infektionsbereitschaft beim gelben Galt des Rindes. **[Variation in resistance of cows to streptococcal mastitis.]**—*Mh. Tierheilk.* **5**, 212-224. 1736

K. made a statistical analysis of the results of milk examination for *Str. agalactiae* infection carried out 15–20 times for each of 338 cows over a period of 3 years. The results were divided into groups according to freedom from infection or according to the number of times each cow was infected during the 3 years:—146 cows (43·2%) were not infected during the period of observation, 85 cows (25%) were infected once, and 62 cows (18·3%) were infected twice.—E. A. HIRSCH.

GROSSENBACHER, E. (1951). Zur Frage des Vorkommens und der Lebensfähigkeit der Galtstreptokokken ausserhalb des Kuheuters. **[Occurrence and survival of mastitis streptococci outside the bovine mammary gland.]**—*Landw. Jb. Schweiz.* **52**, 141-185. 1737

G. reviewed the literature on this subject and investigated the survival of 8 strains of *Str. agalactiae* on or in the following materials:—leather, cow's skin, sheet metal, urine, a mixture of cattle faeces and urine, limewash (clean and contaminated with urine and faeces), cattle faeces (moist and dry), hard wood and soft wood contaminated with urine and faeces, hooves, clean and contaminated straw, cloth, filter paper, sour milk, and cream.—R.M.

WILSON, C. D. (1952). **The control of bovine mastitis.**—*Vet. Rec.* **64**, 525-530. 1738

For the control of bovine mastitis W. recommended bacteriological examination of milk for diagnosis, and treatment of *Str. agalactiae* infection by correctly graded doses of calcium and procaine penicillin in mineral oil and aluminium stearate, given over a period of 5 days.—I. W. JENNINGS.

EDDS, G. T. & TRACE, J. C. (1954). **Mastitis : its etiology, diagnosis, and control.**—*Vet. Med.* **49**, 52-56. 1739

Trauma due to faulty milking machines or milking techniques is probably the most important single predisposing factor in bovine mastitis. Improved diagnosis of this condition can be obtained bacteriologically by the use of a special culture jar that is available, it has two compartments, so that two kinds of culture medium can be used, and it is fitted with a screw cap. By adding traces of cobalt to antibiotic combinations, a 2–10 fold increase in the bactericidal activity and a broadening of the antibacterial

spectrum can be obtained. The use of 20–40 units of oxytocin intravenously will aid in the removal of débris blocking the ductules which is essential for intramammary treatment with antibiotic to be effective. Adequate antibiotic levels must be maintained for 3–5 days until the papilliform proliferations of the epithelium in the ductules have regressed.—A. ACKROYD.

SCHIPPER, I. A. (1953). **A new approach to mastitis therapy.** — *Vet. Med.* **48,** 401-404. **1740**

The main novelty of this approach to the therapy of bovine mastitis under field conditions consists of the use of (mostly single) i/v injections of 10–40 units of oxytocin (purified oxytocic principle) as an aid in effecting drainage. In over 50 cases so treated S. stated that this adjuvant produced "extremely gratifying" results.—G. P. MARSHALL.

DIENES, L. (1953). **L type cultures isolated from streptococci.**—*Proc. Soc. exp. Biol., N.Y.* **83,** 579-583. **1741**

D. described the isolation of L cultures from two strains of α-haemolytic streptococci obtained from the mouths of human beings. Their morphology and method of formation were similar to those of the L cultures of other bacteria.—E. A. GIBSON.

AUSTRIAN, R. (1953). **Morphologic variation in pneumococcus. I. An analysis of the bases for morphologic variation in pneumococcus and description of a hitherto undefined morphologic variant. II. Control of pneumococcal morphology through transformation reactions.**—*J. exp. Med.* **98,** 21-34 & 35-40. **1742**

The author described a hitherto undefined morphological variant of pneumococcus and defined its relation to the 3 previously recognized variants. A study of the interaction of each variant with the transforming principles of the heterologous variants of the same species led to the isolation of 18 of the 20 variants expected to result from these interactions.—W. R. BETT.

JACKSON, G. G., LEPPER, M. H., SETO, J. & DOWLING, H. F. (1953). **Antagonism and addition from combination of aureomycin and penicillin in the treatment of pneumococci infections in mice.**—*Amer. J. med. Sci.* **225,** 525 - 534. [Abst. from authors' summary.] **1743**

Mice experimentally infected with Type I *Streptococcus pneumoniae* were treated with aureomycin and penicillin, each drug alone or both combined, and administered before or after infection. The results were expressed as the percentage of mice surviving 5 days after treatment. A combination of aureomycin and penicillin was antagonistic when penicillin was administered 4 hours after aureomycin, but synergistic if aureomycin was administered 4 hours after penicillin. The combination of the two antibiotics administered simultaneously had an antagonistic action in some mice and a synergistic action in others. The authors discussed the significance of the apparently contradictory results obtained by combined use of these two antibiotics.

MACPHERSON, M. J. (1953). **Isolation and identification of amylolytic streptococci from the rumen of the sheep.**—*J. Path. Bact.* **66,** 95-102. [Author's summary modified.] **1744**

Twenty-five strains of amylolytic streptococci were isolated from the rumen contents of sheep on a variety of diets. In fermentation reactions they resembled *Str. bovis* and a coccus designated RO-6TBR isolated from the rumen by Gall and Huhtanen. Precipitin tests with antisera and Fuller's formamide extracts showed that the organisms belonged to Lancefield's group D. The cell-free supernatant from young cultures without chemical treatment gave precipitin reactions with the homologous antiserum. The Neufeld reaction was used to differentiate between the isolated strains and to identify rumen streptococci *in situ* in rumen contents.

MARSH, H. & FIREHAMMER, B. D. (1953). **Serological relationship of twenty-three ovine and three bovine strains of *Vibrio fetus*.**—*Amer. J. vet. Res.* **14,** 396-398. [Abst. from authors' summary.] **1745**

The authors studied the serological relationship of 14 ovine and 3 bovine strains of *V. fetus,* as indicated by the production of agglutinins in immunized rabbits. They divided the strains into five serological types. The ovine strains fell into types 1, 2, 4 and 5, the majority being of type 1. The bovine strains were all of type 3. They were found to be related to two of the less common ovine types. Six ovine strains isolated in earlier work fell into two distinct types: they were not available for comparison with the above strains.

GARM, O., HOFF, H. & SKJERVEN, O. (1953). Kurative behandlingsforsøk av vibriose. **[Experimental treatment of *V. fetus* infection in g. pigs.]**—*Nord. VetMed.* **5,** 401-416. [In Norwegian. English and German summaries.] **1746**

When 0·75 ml. pure culture of 7 different strains of *V. fetus* from cattle foetuses and from

bull semen was injected i/p into g. pigs in mid-gestation, abortion occurred after 2–6 days in most cases and in the case of one strain after 12 days. When 30 mg. of streptomycin daily were injected i/m, 24, 48, 72 and 96 hours after the culture, abortion did not occur. Treatments with organic arsenic preparations and with 0·2 ml. of 1% " pyogenes " vaccine were ineffective.

In cattle, intra-uterine application of streptomycin-penicillin mixtures on the day after insemination did not adversely affect fertilization and may have been effective against *V. fetus*. The authors described local treatment in the bull.—H. Boyd.

Bryan, H. S. (1953). **The effect of dielectric heat on anthrax spores under feed bag processing plant conditions.**—*Amer. J. vet. Res.* **14,** 328-330. 1747

Jungherr [*V.B.* **22,** 1141] had shown that exposure of anthrax contaminated bags in small bales to dielectric heat up to 280°F. for 9 min. was insufficient. B. made tests under the actual conditions prevailing at processing plants. When strips of coarse jute or cotton fabric, contaminated with culture of *B. anthracis* from bone meal were air dried and inserted in the centre of a bale of 250 feed bags the spores were apparently killed after exposure for 30 min. to 112°, 121° and 132°C. Measurements of the weight loss of moisture which occurred at these temperatures indicated that the moist heat that developed in the large bales had a lethal effect on the spores. Further trials are needed.—F.E.W.

Hupka, E. (1953). Die Diagnose der Tuberkulose beim Pferd. **[Diagnosis of TB. in the horse.]**—*Dtsch. tierärztl. Wschr.* **60,** 333-335. 1748

H. stated that diagnosis of TB. in horses based on a positive tuberculin reaction alone, using either the intradermal or the intradermo-palpebral method, is not always reliable. He spoke also of clinical signs to be observed when assessing the results of a test.—E.G.

Kind, R. W. & Brough, M. C. (1954). **Investigation of an outbreak of bovine tuberculosis in a rural area in Leicestershire.**—*Brit. med. J.* Feb. 13th, 372-374. 1749

The authors described 5 cases of TB. in children aged 5–9 years and living in the same district. Bovine type tubercle bacilli were isolated from the tonsils of one child. A cow secreting tubercle bacilli in the milk and with clinical TB. of the udder was found on the farm which supplied milk to the district. Out of 47 children in this district that were tuberculin tested, 31 were positive.—R.M.

Meyn, A. (1953). Die tuberkulöse Bakteriämie des Rindes. **[Tuberculous bacteraemia in cattle.]**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **1,** Pt. 1. 152-155. [In German. English and French summaries.] 1750

M. discussed the pathogenesis of TB. in cattle, with reference to the stages at which tubercle bacilli may enter the blood stream. —R.M.

Hartwigk, H. & Weinhold, E. (1953). Untersuchungen über die Brauchbarkeit der kombinierten Hämagglutination-Hämolyse-Reaktion zur Erkennung vorgeschrittener Formen der Rindertuberkulose. **[The diagnosis of advanced TB. in cattle by means of the combined haemagglutination - haemolysis reaction.]**—*Zbl. VetMed.* **1,** 25-48. [English and French summaries.] 1751

Known freedom from TB. in 127 cattle was confirmed by the haemagglutination reaction in 95·27% and by the haemolysis reaction described by Middlebrook [*V.B.* **21,** 3457] in 92·13% of cases. In 106 infected cattle the figures were 79·24% by the haemagglutination and 86·79% by the haemolysis reaction. The authors suggested that both reactions should be used. They stated that they indicate approximately the extent of the TB. and are not influenced by oestrus, pregnancy, parturition, parasitic infestations, nor by brucella infection. —W. G. Siller.

Christiansen, M. J. (1953). **Domestic animal and man in the life cycle of the bovine tubercle bacteria.** — *Proc. XVth Int. vet. Congr. Stockholm,* 1953. **1,** Pt. 1. 155-159. [In English. French and German summaries.] 1752

From 1943-47 there were 204 fresh cases of bovine type *Mycobact. tuberculosis* infection in human beings in the peninsula of Jutland, where the average population was 1,800,000. During the same period the percentage of herds of cattle infected with TB. decreased from 29% to 4%. From 1948-52 there were 95 fresh cases of bovine type infection in human beings, and the percentage of infected herds decreased still further. In each human case, C. attempted to trace the origin of the disease and was able to report evidence of direct infection from cattle in some cases.—R.M.

Rolle, M. & Kalich, J. (1953). Über das Vorkommen der Tuberkulosebakterien im Darmkanal unter Berücksichtigung der Fütterungstuberkulose. **[Occurrence of tubercle**

bacilli in the intestinal tract with reference to TB. following the ingestion of infected food.] —*Z. Hyg. InfektKr.* **138,** 9-16. **1753**

Tubercle bacilli, fed to healthy calves with a normal flora of the large intestine, are quickly excreted from the intestine without producing a tuberculous infection. Administration *per os* of toxic dead *Bact. coli* causes *Bact. coli* septicaemia, in the course of which tubercle bacilli may pass from the intestine into the blood and produce TB. of organs. TB. following ingestion of infected food usually occurs only in the presence of toxic *Bact. coli* in the intestine. —W. R. Bett.

Tavoni, V. & Sali, G. (1953). Sul passaggio nel latte del micobatterio tubercolare in vacche tubercolotiche, ma senza specifiche localizzazioni mammarie. **[Absence of *Mycobacterium tuberculosis* in milk of tuberculous cows not affected with TB. of the udder.]**—*Atti Soc. ital. Sci. vet., Sanremo,* 1952. **6,** pp. 634-646. [English and French summaries.] **1754**

An account of observations on 14 cows free from demonstrable lesions of TB. of the udder. Four were reactors to the tuberculin test and lesions elsewhere than in the udder were present when examined P.M. Four were slaughtered without tuberculin tests and TB. lesions other than in the udder were present. Six were reactors and were not slaughtered.

Tubercle bacilli were not demonstrable in the milk of any of these cows.—I. Martini.

Christiansen-Lenger, J. (1952). Weitere Untersuchungen über Gestalt und Eigenart der Bakterien bei den einzelnen Tuberkuloseformen des Rindes. **[Characteristics of tubercle bacilli from various forms of TB. in cattle.]**—*Inaug. Diss. Hanover.* pp. 27. **1755**

The author examined the morphology of the bovine type tubercle bacillus in stained smears by light and fluorescence microscopy. Chronic TB. was associated with granular forms of bacilli and a few degenerated forms (bacilli of abnormal shape). Generalized TB. was associated with granular and homogenous forms in the proportion of 2:1. A primary complex (localization of infection to lymph nodes at the point of entry) was associated with homogenous forms and a few " sporoid " forms (forms having a dark-staining central nucleus).—R.M.

Dodd, F. C. (1952). **A case of miliary bovine tuberculosis in a dog.**—*N.Z. vet. J.* **1,** 17-21. **1756**

A note on TB. in a dog caused by a bovine type organism.—R.M.

Bacos, J. M. & Smith, D. T. (1953). **The effect of corticotropin (ACTH), dihydrostreptomycin, and corticotropin - dihydrostreptomycin on experimental bovine tuberculosis in the rabbit.**—*Amer. Rev. Tuberc.* **67,** 201-211. [French and Spanish summaries.] **1757**

Corticotropin (A.C.T.H.) does not materially reduce the resistance of rabbits previously sensitized with *M. tuberculosis* R1v strain to bovine type TB. It can be administered safely if dihydrostreptomycin (60 mg. daily for 20 days, then 30 mg. daily for up to 120 days) is given simultaneously.—F. R. Harris.

van Waveren, G. M. (1953). **Testing of cattle with P.P.D.-tuberculins.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **1,** Pt. 1. 140-145. [In English. French and German summaries.] **1758**

The author described results obtained with the single i/d comparative tuberculin test in normal and tuberculous cattle and in cattle with " skin lesions ", employing P.P.D. (purified protein derivative) avian and mammalian types of tuberculin, prepared according to the method used at Weybridge. This tuberculin test was officially adopted for the testing of cattle in the Netherlands in 1950. He considered the Stormont test to be less sensitive than the single comparative test.—R.M.

Takeda, Y., Watanabe, T., Kasai, N., Aoki, Y., Kuribayashi, K. & Hoshino, T. (1952). **Studies on the active components of tuberculin in the hemagglutination.**—*Jap. J. exp. Med.* **22,** 405-411. [In English.] **1759**

In haemagglutination tests with rabbit antisera and with sera from 2 human patients, using ether-extracted tuberculo-protein and polysaccharide fractions prepared from 3 lots of O.T., the polysaccharide fraction from 2 lots of tuberculin was more potent than the protein fraction; in the other lot the protein fraction was more potent. Using somatic polysaccharide and nucleoprotein fractions, the former fraction was potent while the latter was almost entirely inactive. Polysaccharide II, soluble in 50% alcohol was found to be inactive whereas polysaccharide I prepared from the supernatant was more highly active than the original polysaccharide. Absorption tests confirmed the predominant role of the polysaccharide.—F.E.W.

Grey, R. C. & Long, D. A. (1954). **The influence of streptococcal toxin on the development of tuberculin sensitivity in guinea-pigs.** —*Brit. J. exp. Path.* **35,** 85-91. [Authors' summary slightly modified.] **1760**

Using the response to i/d injection of tuberculin as a measure of allergic hypersensitivity in albino g. pigs sensitized with B.C.G. or with dead virulent tubercle bacilli, it was found that:—Group A haemolytic streptococci contain a heat-labile antigen which increases sensitivity to tuberculin: the rate of development of the tuberculin reaction is not affected. The effect is prevented by administering scarlatinal antitoxin before the antigen. When filtrates containing this antigen are injected daily, the peak of hypersensitivity is reached in three weeks. They have no other detectable effect, weight being gained normally.

Hypersensitivity in toxin-treated g. pigs is less susceptible to cortisone desensitization than that in untreated g. pigs.

The exotoxins of five other species of bacteria had no such effect.

PLUM, N. (1952). **Cultivation of bovine and avian tubercle bacilli on media containing iso-nicotinic acid hydracide.**—*Nord. VetMed.* **4,** 1090-1092. [In English. German and Danish summaries.] **1761**

Iso-nicotinic acid hydrazide added at a dilution of 1:50,000–1:5,000,000 to Löwenstein's solid medium inhibited growth of bovine type tubercle bacilli, but aided growth of avian type strains.—J. E. SMITH.

I. BALDELLI, B. & BADIALI, L. (1953). L'idrazide dell'acido isonicotinico nella tubercolosi aviare sperimentale. [***Iso*-nicotinic acid hydrazide in experimental TB. in fowls.**]—*Atti Soc. ital. Sci. vet., Sanremo,* 1952. **6,** pp. 448-450. [English and German summaries.] **1762**

II. BALDELLI, B. & BADIALI, L. (1953). L'idrazide dell'acido isonicotinico nella tubercolosi aviare spontanea. [***Iso*-nicotinic acid hydrazide in spontaneous TB. in fowls.**]—*Ibid.* pp. 450-454. [English and German summaries.] **1763**

III. BALDELLI, B. & BADIALI, L. (1953). Effetti dell'idrazide dell'acido isonicotinico nei polli sani. [**Toxicity of *iso*-nicotinic acid hydrazide in healthy fowls.**]—*Ibid.* pp. 454-459. [English and German summaries.] **1764**

I, II & III. Daily doses of 4 mg./kg. body wt. of *iso*-nicotinic acid hydrazide given to healthy fowls over a period of one month were well tolerated, whereas doses of 10 mg. and higher proved toxic. The lethal dose was established at 600 mg./kg. body wt.

The drug had no effect on either experimental or spontaneous TB. in fowls.—E.G.

FILIPOVITCH, D. (1953). Recherche des diverses mammites et en particulier des mammites tuberculeuses des vaches laitières, cliniquement décelables [**Diagnosis of bovine mastitis, especially tuberculous mastitis.**]—*Bull. Off. int. Epiz.* **39,** 530-534. **1765**

In the course of tuberculin testing of cattle in Yugoslavia during 1946-52, one thousand six hundred and forty-eight out of 6,652 cows on 45 state-owned or co-operative farms yielded a positive reaction to the i/d tuberculin test; 666 had forms of mastitis; 22 of the latter were diagnosed clinically as cases of tuberculous mastitis. —G. V. LAUGIER.

BINGEL, K. F. (1953). Tuberkulosedesinfektion der Milch durch Pasteurisierung unter Bedingungen des Laboratoriumsexperimentes. [**Effectiveness of pasteurization on *Mycobacterium tuberculosis* in milk.**]—*Zbl. Bakt. I. (Orig.).* **159,** 427-436. **1766**

B. constructed a curve plotting the death of tubercle bacilli in milk against various combinations of heat and exposure time, using a copper cylinder, rotating in a water bath, the layer of milk on it never being thicker than 0·5 mm. The milk samples tested were either naturally infected or infected with a heavy inoculum of tubercle bacilli. It was concluded that, while both high temperature—short exposure (185°F., 7 sec.) and lower temperature—longer exposure (140°F., 30 min.) are very safe, the now much used combination of 166°F.—40 sec. leaves so narrow a margin of safety that, given a really heavy infection, the slightest understepping of any of these values must lead to trouble.—A. MAYR-HARTING.

HOUGHTON, L. E. & DAVIES, D. (1954). **The effect of cortisone on BCG vaccination in guinea pigs.** — *Tubercle., Lond.* **35,** 2-6. [Abst. from authors' summary.] **1767**

The authors discussed work on the effect of ACTH and cortisone on antibody production and the course of infection.

Under the experimental conditions described, cortisone given in a daily dosage of 1–3 mg. to g. pigs for 45 days from the day before B.C.G. vaccination did not alter the degree of tuberculin allergy produced. When given in a dosage of 6 mg. daily it appeared to produce moderate depression of tuberculin allergy, but increased the protection afforded against subsequent challenge with virulent tubercle bacilli.

The authors discussed the discrepancy between these results and those in published literature recording depression of antibody production with cortisone treatment. They suggested that circulating antibodies fail to provide a true index of antibody response when measured in proximity to cortisone treatment, and

that possibly, under the influence of cortisone, B.C.G. may survive longer in the animal body and provide a continued antigenic stimulus.

BERGER, K. & PUNTIGAN, F. (1953). Über Infektionsversuche mit BCG-Keimen bei Goldhamstern. [**Infection of hamsters with B.C.G.**]—*Z. Hyg. InfektKr.* **137**, 1-12. **1768**

Of hamsters injected with large doses of B.C.G., 26 i/p and 29 s/c, all but 2 injected s/c died within 9 months after severe wasting. Death appeared to be due rather to greater sensitivity to metabolic products of B.C.G. than to TB.—R. B. HOLCOMBE.

GERNEZ-RIEUX, C., PIAT, G., TACQUET, A. & VOISIN, C. (1952/53). Innocuité de la vaccination antituberculeuse par voie digestive à doses massives et répétées, chez les adultes tuberculeux et non tuberculeux. Devenir du B.C.G. chez ces sujets. [**Innocuity of vaccination against TB. by the ingestion of large repeated doses of killed cultures of B.C.G. strain.**]—*Ann. Inst. Pasteur, Lille.* **5**, 1-12. **1769**

Twenty-four patients, including 14 with pulmonary TB., were able to take by mouth massive doses of B.C.G. without local or general side-effects. In 7 out of 10 non-tuberculous patients so treated, living B.C.G. was found in the stools.—W. R. BETT.

ILAVSKY, J. (1954). **A new procedure for screening antituberculous agents. Effect of chemotherapeutic agents on mice infected with massive doses of tubercle bacilli intraperitoneally.**—*Amer. Rev. Tuberc.* **69**, 280-286. [French and Spanish summaries. Abst. from author's summary.] **1770**

Massive doses of human type tubercle bacilli are injected i/p into mice; treatment is begun after 48 hours and continued for 7 days. The experiment is followed for 3 weeks during which food consumption, body wt., and mortality are recorded. At the 24th day, the remaining mice are killed and examined and macroscopic lesions are counted. These criteria give better assessment of activity than the measurement of survival time alone. Compounds which have promising activity can be separated from inactive ones after the single week of treatment.

Using this rapid procedure the activities of PAS, streptomycin, amithiozone, and isoniazid are in accord with those generally found for these compounds.

FRIEDMANN, I. & RUSSELL, K. (1953). **Serpiginous growth of tubercle bacilli in media containing embryonic tissue.**—*J. Path. Bact.* **65**, 495-500. **1771**

When various B.C.G. strains, one avirulent human type strain H37Ra and one chromogenic saprophytic strain (Sleap) were grown in liquid media in the presence of 10–20% tissue from chick embryos 9–11 days old, all the strains examined produced cords and serpiginous structures similar to those formed by virulent human and bovine type strains. In hanging-drop cultures containing embryonic tissue the avirulent human strain produced spreading colonies without serpiginous structures. The effect of embryonic tissue on mycobacteria appeared to be nonspecific and somewhat variable.—E. A. HIRSCH.

DUBOS, R. J. & HIRSCH, J. G. (1954). **The antimycobacterial activity of a peptide preparation derived from calf thymus.**—*J. exp. Med.* **99**, 55 - 63. [Authors' summary modified.] **1772**

The authors prepared from calf thymus a stable, water-soluble substance having potent but not rapid antimycobacterial activity under certain conditions *in vitro*; they proposed to name it thymus peptide. In final concentrations of 1–10 μg. per ml. of an albumin medium it inhibits the growth of various strains of mammalian type mycobacteria, but manifests little or no inhibitory activity against a variety of other microbial species.

The ability of thymus peptide to inhibit the multiplication of tubercle bacilli diminishes when the inoculum is large, or when the medium is acidic. It is also markedly antagonized by addition of enzymatic hydrolysate of casein or beef heart infusion broth to the culture medium. Tubercle bacilli exposed to this compound for longer than 2 weeks could not be made to multiply in ordinary culture media.

Substances similar or identical to the thymus peptide preparation could be extracted from calf spleen, sheep thymus, cattle lymph nodes, and calf pancreas, but not from calf lung or calf liver.

DEMARTEAU, H. & LEDERER, E. (1952). Sur un acide mycolonique (nouveau type d'acide mycolique) isolé d'une souche bovine de *Mycobacterium tuberculosis*. [**A new mycolic acid isolated from a bovine strain of** *Mycobact. tuberculosis*.]—*C. R. Acad. Sci., Paris.* **235**, 265-267. **1773**

The authors isolated a β-hydroxy, ketonic mycolic acid from a strain of bovine type *M. tuberculosis*. They proposed that ketonic mycolic acids be called mycolonic acids.

—R. B. HOLCOMBE.

STAMP, J. T. & WATT, J. A. (1954). **Johne's disease in sheep.**—*J. comp. Path.* **64,** 26-40. [Abst. from authors' summary.] 1774

The authors described the pathology of Johne's disease in sheep as it occurs in Scotland. On histological appearances they recognized 4 groups, characterized by:—(1) masses of epithelioid cells, the pigmented variety of *M. johnei* being present in abundance; (2) a varying number and distribution of epithelioid cells, with considerable increase in the number of leucocytes; fewer organisms seen in smears; sections revealing the presence of the organism in the large areas of cellular infiltration but not in the smaller discrete foci; (3) foci of epithelioid and multinucleate cells, together with giant cells of the Langhans type, the organism being demonstrable in most cases only by cultural examination; (4) lesions similar to group 3, but with necrosis, caseation and calcification, the organism not always being demonstrable even by culture. The pigmented variety of *M. johnei* appears to be more virulent for sheep than the " classical " strain.

ANON. (1953). **The Johne's disease story.**—*Vet. Rec.* **65,** 749-754. 1775

An account of an exhibit by N. Hole of the Veterinary Laboratory, Ministry of Agriculture, Weybridge, covering diagnosis, with emphasis on the complement-fixation test with blood serum, the microscopic detection of the organism in the faeces, and the nature of the bowel lesions.—W. S. MARSHALL.

PEARSON, J. K. L. (1953). **Observations on the recent incidence and control of Johne's disease in Northern Ireland.**—*Irish. vet. J.* **7,** 213-221. 1776

Since the increase from 1947 in the importations of cattle from Great Britain, 62 cases of Johne's disease have been confirmed in Northern Ireland in the past 3 years, all in imported cattle or in those bred from imported cattle. Eighteen cases occurred in one herd. Intradermal skin tests with avian type P.P.D. tuberculin and with johnin gave positive reactions in the clinical cases in the latter herd, but complement-fixation tests were negative in all except one herd. Both tests are now being carried out on imported cattle and it would appear that the skin test may be positive in the early stages of active disease whilst the c.f. test is still negative. As the disease progresses, the skin loses its sensitivity and the c.f. test becomes positive. The recent use of a hypersensitive avian type antigen in the c.f. test has resulted in positive reactions in some pre-clinical cases and may be of considerable value.

—A. ACKROYD.

HOLE, N. H. (1953). La maladie de Johne. Emploi de la fixation du complément comme épreuve de diagnostic. **[The complement-fixation test in diagnosis of Johne's disease.]** —*Bull. Off. int. Epiz.* **40,** May. pp. 117-128. [Abst. from English summary.] 1777

H. gave details of the technique of a c.f. test for the diagnosis of Johne's disease. In clinically suspected cases the test was found to be of value in confirming diagnosis during life, and the confirmatory *post-mortem* evidence collected up to the end of 1952 showed an accuracy for such suspected cases of 94%.

The value of the test for identifying pre-clinical infection requires to be given further study.

It is probable that a blood response to the test may not develop until about 9 months after infection.

DOYLE, T. M. (1953). **Susceptibility to Johne's disease in relation to age.**—*Vet. Rec.* **65,** 363-364. 1778

Twelve adult beef Shorthorn cattle, 17 months to 6 years old, bred and reared on a farm free from TB. for many years and where Johne's disease had never been known to occur, were each given *per os* a freshly prepared suspension in saline of scrapings of mucosa of the small intestine of 6 clinically affected cows. Two cows over 5 years of age became infected as did 2 steers, the latter being slaughtered *in extremis*. Of two others which developed symptoms, both excreted small numbers of *M. johnei* in the faeces during life and on P.M. examination only one yielded a culture; it was considered doubtful whether these two were infected. The course of the disease appeared to be towards prolonged unthriftiness with possible recovery in the two older cows. The period of greatest susceptibility appears to be considerably longer than it has generally been believed to be.—F.E.W.

RANKIN, J. D. (1953). **Isoniazid : its effect on *Mycobacterium johnei in vitro* and its failure to cure clinical Johne's disease in cattle.** —*Vet. Rec.* **65,** 649-651. [Abst. from author's summary.] 1779

Iso-nicotinic acid hydrazide retarded growth of *M. johnei in vitro* in concentrations greater than 1 μg. per ml., but although satisfactory blood levels of the drug could be produced in cattle by oral or intravenous administration, it failed to cure three clinical cases of Johne's disease.

SMITH, H. WILLIAMS. (1954). **The effect of chemotherapeutic agents on** *Mycobacterium johnei.*—*J. comp. Path.* **64,** 15-19. [Author's summary slightly modified.] **1780**

The author studied the sensitivity of ten recently-isolated strains of *M. johnei* and the H37Rv strain of *M. tuberculosis* to 9 chemotherapeutic agents *in vitro,* using a modification of Dubos's liquid medium. Generally speaking the *M. johnei* strains were more resistant to the chemotherapeutic agents than was H37Rv. They were quite sensitive to streptomycin but were resistant to *iso*-nicotinic acid hydrazide, sodium *p*-aminosalicylate, sulphathiazole, sulphetrone, 4:4′ diamino-diphenyl-sulphone, penicillin, chloramphenicol and terramycin.

SMITH, H. W. (1953). **Modifications of Dubos's media for the cultivation of** *Mycobacterium johnei.* — *J. Path. Bact.* **66,** 375-381. [Author's summary modified.] **1781**

S. described modifications, to support the growth of *M. johnei,* of the solid and liquid media devised by Dubos for the cultivation of *M. tuberculosis.* These modified media were very suitable for the primary isolation of the organism from infected material and for this purpose they were superior to Taylor's modification of Finlayson's egg medium.

BAHR, L. (1953). **" Summer-mastitis." (Preliminary report; summary.)**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **2,** Pt. 1. 849-852. [In English. French and German summaries.] **1782**

B. collected flies which were seen on the teats of cows. The commonest fly was *Hydrotea irritans,* a member of the family Anthomydea. Corynebacteria were identified in histological sections of the viscera of the flies, and pure cultures of *C. pyogenes* were obtained from the viscera. B. concluded that in certain districts of Jutland, Denmark, *H. irritans* was an important vector of *C. pyogenes* infection of the mammary gland in cattle.—R.M.

BRYGOO, E. R. (1953). Contribution à l'étude des agglutinines naturelles pour le bacille de Whitmore. Les agglutinines spécifiques dans quelques cas de mélioidose. **[Specific and non-specific agglutinins in cases of melioidosis.]** —*Bull. Soc. Path. exot.* **46,** 347-353. **1783**

Of 465 normal human sera examined by the agglutination test 2% gave positive reactions above a dilution of 1:80, while sera from persons infected with *Pfeifferella whitmori* were positive in higher dilutions. B. suggested that the test is of diagnostic value.

—E. J. L. SOULSBY.

ROOTS, E. & VENSKE, W. (1952). Serologische und immunogene Eigenschaften der *Erysipelothrix rhusiopathiae* (*E. muriseptica*). I. Die Antigenstruktur und die Methoden des Nachweises der Serotypen. II. Untersuchungen über die Gewinnung reiner B-Stämme und deren Stabilität. **[Characteristics of** *E. rhusiopathiae.* **I. Antigenic structure and demonstration of serological types. II. Research on B strains.]**—*Berl. Münch. tierärztl. Wschr.* **65,** 184-187 & 223-225. **1784**

The authors examined the antigenic structure of 170 strains of *Erysipelothrix rhusiopathiae* and divided them into the A and B groups described by Dedié [*V.B.* **23,** 2764]. Pure cultures of strain B, found by Dedié to be a good antigen for the preparation of swine erysipelas vaccines, were isolated from single organisms or colonies. After a year, none of these pure cultures had reverted to A or mixtures of A and B strains.—R.M.

ROOTS, E. (1953). Die Grundlagen der Rotlaufimmunität. **[Immunity in swine erysipelas.]**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **1,** Pt. 1. 44-49. [In German. English and French summaries.] **1785**

R. discussed knowledge of the immunizing properties and antigenic structure of different strains of *E. rhusiopathiae,* with particular reference to the work of Roots and Venske [see preceding abst.].—R.M.

AVERDUNK, G. (1953). Vergleichende Untersuchungen über die Virulenz der A- und B-Stämme der *Erysipelothrix rhusiopathiae* (*E. muriseptica*). **[Comparative virulence of A and B strains of** *E. rhusiopathiae.***]**—*Zbl. Vet-Med.* **1,** 188-203. [English, French and German summaries.] **1786**

The number of bacteria in the LD_{50}, their viability in 24-hour broth culture, their " virulence coefficient " and the time required to kill white mice were used as criteria for estimating the pathogenicity of 5 strains of serological group A and 7 of group B of *E. rhusiopathiae.* Group A strains were generally more virulent than those of group B.—W. G. SILLER.

SOLOMKIN, P. S. (1954). **[Listerella infection in swine.]**—*Veterinariya, Moscow.* **31,** No. 1. pp. 24-29. [In Russian.] **1787**

S. gave an account of *Erysipelothrix* (*Listeria*) *monocytogenes* infection in pigs in Russia and its treatment with penicillin and sulphonamides, and described the disease as seen on 4 farms. He stated that rodents and certain carnivorous animals are reservoirs of infection.

—F. A. ABBEY.

BLAWAT, F. (1952). **Studies concerning agglutination of *Pasteurella septica* by anti-brucella sera.**—*Bull. mar. trop. Med. Gdansk.* **4**, 181-189. **1788**

B. examined sera from 58 cattle infected with *Br. abortus*, 36 cattle immunized against haemorrhagic septicaemia and 2 rabbits immunized against *Br. abortus* for cross-agglutination between *Br. abortus* and *Past. septica*. No cross agglutination was observed, but *Past. septica* agglutinins were present in the sera of 50 out of 58 cattle infected with *Br. abortus*.—R.M.

STOKREEF, G. J., PILLE, L. C. & VAN DER KREEK, F. W. (1953). Pasteurellosis bij het rundvee. **[Pneumonia caused by *Pasteurella* infection in a cow.]**—*Tijdschr. Diergeneesk.* **78**, 802-803. [English, French and German summaries.] **1789**

The authors described pleuro-pneumonia in a cow caused by an organism resembling *Past. haemolytica*.—H. BOYD.

TUCKER, E. W. (1953). **A case of natural *Pasteurella multocida* mastitis.**—*Cornell Vet.* **43**, 378-380. **1790**

T. described mastitis in a 6-year-old cow. *Past. septica* was isolated on 39 consecutive days from the viscous, yellowish secretion of a fibrosed and atrophied quarter. Consistently negative cultural results were obtained after treatment with intramammary neomycin sulphate, but the quarter became functionless.

—E. A. GIBSON.

GORZYNSKI, E. A. & NETER, E. (1953). **Study on the *in vitro* efficacy of erythromycin and carbomycin on *Pasteurella multocida*.**—*Antibiot. & Chemother.* **3**, 1211-1214. [Spanish summary p. 1293. Authors' summary modified.] **1791**

The authors determined the *in vitro* susceptibility of 10 strains of *Past. septica* to erythromycin (a product of *Streptomyces erythreus*) and carbomycin (a product of *S. halstedii*). It was found that both antibiotics in concentrations ranging from less than 1 μg. to 10 μg./ml. of broth inhibited the growth of all these strains. The antibiotics were effective against both large and small inocula. The minimal bactericidal concentrations were either equal to or up to four times greater than the minimal bacteriostatic concentrations. The disc method revealed a fairly good correlation with the tube dilution method.

SCHULZ, K. H. (1951). **Notes on wild-rodent plague in South Africa.**—*J. trop. Med. (Hyg.)* **54**, 249-255. **1792**

No *Pasteurella pestis* infection (plague) had been known in S. Africa before 1899 when a small outbreak occurred. Between 1900 and 1905, there had been 1,694 cases reported in several outbreaks, since when the disease had been more or less continuously sporadic.

While all small indigenous rodents of the veld are susceptible, only 3 out of 16 possible species play an important role. S. described these three—the Lombecula gerbil (*Taterona lombecula*), the Namaqua gerbil (*Desmodillus auricularis*) and the multi-mammate mouse (*Mastomys coucha*)—in some detail. The first named is probably the most important carrier, but the mice may be carried hundreds of miles in grain sacks, their main role in the spread of plague being that of carriers between wild rodents and human beings. Although infested rodents sometimes harbour only a few fleas, their nests act as constant reservoirs.

Wild rodent plague to-day follows the distribution of veld rodents. In rodents there are 3 recognized stages, the pre-epizootic, the epizootic, and the post-epizootic phase when the rodent population, decimated by the disease, gradually returns to normal.

—D. S. RABAGLIATI.

GALLI, G. (1953). L'azione della streptomicina nella corizza infettiva dei polli. **[Action of streptomycin in fowl coryza.]**—*Clin. Vet., Milano.* **76**, 33-35. **1793**

Twenty fowls affected with fowl coryza (*Haemophilus gallinarum* infection) were successfully treated with an initial i/m injection of 100–200 mg. streptomycin, followed after 48 hours by a half dose.—I. MARTINI.

SMITH, H. W. (1954). **The sensitivity of strains of *Bacterium coli* isolated from cases of calf scours to certain chemotherapeutic agents.**—*Vet. Rec.* **66**, 42-43. [Author's summary slightly modified.] **1794**

A considerable variation was noted between 58 strains of *Bact. coli* isolated from different cases of calf scours when their *in-vitro* sensitivity to sulphamethazine and dihydrostreptomycin respectively was determined. In general these strains were sensitive to chloramphenicol, moderately so to terramycin and less so to aureomycin; they were very resistant to penicillin.

These observations indicate the desirability of determining the *in-vitro* sensitivity of the prevalent strains of *Bact. coli* when the curative treatment of outbreaks of calf scours is contemplated.

GEURDEN, L. & DEVOS, A. (1954). Coligranulomatose bij pluimvee. **[Coli-granulomata in**

the fowl.]—*Vlaam. diergeneesk. Tijdschr.* 23, 1-11. [In Flemish. English, French and German summaries.] 1795

An account of a condition in fowls here spoken of as a granuloma caused by *Bact. coli*. Of 10 strains isolated from 42 fowls 5 belonged to type I, 2 to type II, and one each to types III, IV and V; all were mucoid and all except the last one haemolytic.—C. A. VAN DORSSEN.

JEZIERSKI, A. (1953). Prophylaxie et thérapie des paratyphoses bovine, porcine et galline. [**Prevention and treatment of salmonella infection in cattle, pigs and fowls.**]—*Bull. agric. Congo belge.* 44, 1047-1054. [Dutch summary.] 1796

J. claimed good results for vaccination with formolized broth cultures in the control of salmonella infection in cattle, pigs and poultry.

—D. LUKE.

MURA, D., ALTIERI, M. & CONTINI, A. (1953). Indagini sull'aborto ovina e caprino da Salmonella—I e II. (Nota (I)). [*Salmonella abortus-ovis* **infection in sheep and goats.**]—*Atti Soc. ital. Sci. vet., Sanremo,* 1952. 6, pp. 673-676. [English and French summaries.] 1797

Further studies on salmonella abortion in sheep and goats [see also *V.B.* 23, 41] confirmed the presence in high titre of specific agglutinins to *S. abortus-ovis* in the sera ot adult males and females in infected flocks, and in the sera of aborted foetuses. Such agglutinins were not demonstrable in the sera of lambs and kids, or of sexually immature females. The authors failed to isolate the organism in culture from the blood of 8 infected males and 33 infected females; preputial washings and semen also gave negative results.—I. MARTINI.

GREGORY, T. S. (1953). **Problems of infection and immunity in bovine brucellosis.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. 1, Pt. 1. 100-104. [In English. French and German summaries.] 1798

G. discussed reasons for the high incidence of abortion during the 6th month of pregnancy in heifers infected with *Br. abortus,* and developed a theory of " silent entry " (the entry of such small numbers of *Br. abortus* that no resultant antibody is detected by the agglutination test) to account for the absence of a positive agglutination test in some cattle at the time of abortion. He also discussed differences between natural infection and the methods used to challenge immunity.—R.M.

COTTON, C. M. (1953). **An intensive study of postvaccination responses in groups of calves vaccinated intracutaneously and subcutaneously with Strain 19 *Brucella abortus* vaccine.** —*Amer. J. vet. Res.* 14, 337-342. 1799

C. vaccinated two comparable groups of 108 calves each, respectively with 0·2 ml. of *Br. abortus* Strain 19 i/d and with 5 ml. s/c. Agglutination and opsonocytophagic tests and some haematological studies indicated that the response of the i/d inoculated group was equal to and in some cases better than that of the s/c inoculated group. Nearly all of the former had negative agglutination titres 6 months later. Calves which had been suckled by dams which were positive reactors remained susceptible to field infection.—E. A. GIBSON.

D'ALÒ, G. (1952). Applicazione della " prova dell'anello " al latte di pecora. [**The ring test with ewes' milk.**]—*Bol. Ist. sieroter. Milano.* 31, 525-534. [English summary.] 1800

The author found considerable agreement between the *Br. abortus* ring test and the blood serum agglutination test in infected sheep. However only a very strongly positive ring test should be interpreted as proof of infection. No regular agreement was found between the allergic reactions and the ring test.—I. MARTINI.

HOERLEIN, A. B. (1953). **Studies on swine brucellosis. III. The differentiation of specific and non specific agglutination titers.** —*Cornell Vet.* 43, 28-37. 1801

H. found that serum from pigs that were negative to the agglutination test for brucella infection when incubated for 16 hours at 56°C. tended to yield non-specific positive reactions when incubated for 40–48 hours at 37·5°C.

—IAN NEWSAM.

STABLEFORTH, A. W. (1953). **The international standardisation of veterinary biological products, with special reference to recent activities of O.I.E., F.A.O. and W.H.O.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. 1, Pt. 1. 36-41. [In English. French and German summaries.] 1802

S. briefly discussed methods of standardizing biological products, and gave a list of those for which international standards are recognized. He described the activities of the Committee on Biological Standardization of the World Health Organization in relation to *Brucella abortus* antiserum and mammalian P.P.D. tuberculin (recognized standards), and avian P.P.D. tuberculin and Q fever antiserum (under consideration for

standardization). He discussed other products worthy of international standardization, such as swine erysipelas antiserum and *Clostridium welchii* Type B and Type D antisera.—R.M.

ANON. (1952). **Diagnostic criteria for human brucellosis. Report No. 2 of the National Research Council, Committee on Public Health aspects of brucellosis.**—*J. Amer. med. Ass.* **149,** 805-808. **1803**

The only absolute confirmation of the diagnosis of brucella infection in human beings is the isolation of the organism from the patient. The dermal sensitivity test is valueless for the diagnosis of a suspected case. An agglutination reaction titre of 1 : 320 or higher reasonably, but not absolutely, confirms a presumptive diagnosis. A standardized, reliable brucella antigen should be readily available for all laboratories. [There is veterinary international standardization (see preceding abst.)]—W. R. BETT.

ERCOLI, N. & CARMINATI, G. M. (1952). **Antispirochetal interference between antibiotics and arsenoxide.**—*Science.* **116,** 579-582. **1804**

In therapeutic experiments on mice infected with *Borrelia duttoni* it was found that while the action of arsenoxide on the spirochaetes was synergistically enhanced by combined treatment with streptomycin, penicillin or bacitracin respectively, therapeutic interference not only with the delayed action of arsenoxide but also with the immediate action of the antibiotic was demonstrable when combined treatment with terramycin, aureomycin or chloramphenicol respectively was used. The authors discussed these findings and suggested that therapeutic interference may follow competition between the drugs for what they termed " elective fixation-penetration " of the micro-organism and that such interference is not related to the chemoreceptor mechanism.—JOHN SEAMER.

BROOM, J. C. (1953). **Leptospirosis in tropical countries. A review.**—*Trans. R. Soc. trop. Med. Hyg.* **47,** 273-286. [Author's summary modified.] **1805**

B. gave a short general description of leptospirosis as it affects man and domestic animals in tropical countries. He gave the results of serological tests carried out on some 200 cases of clinical leptospirosis among members of the Armed Forces in Malaya and recorded the isolation of *L. bangkinang, L. bataviae,* and *L. canicola* from man in that country, and of *L. medinensis* from man in Australia. He gave a brief summary of work on leptospirosis in certain tropical countries.

BABUDIERI, B. & AUSTONI, M. (1953). **The leptospiroses in Italy.**—*Schweiz. Z. allg. Path.* **16,** 514-520. [In English.] **1806**

At least 11 species of pathogenic leptospira occur in Italy. The infection is most common in the rice fields in the Po valley. Dogs are more often infected with *L. icterohaemorrhagiae* than with *L. canicola.* Mice transmit *L. bataviae* in the rice fields and pigs transmit *L. pomona* and *L. mitis.*—E. G. WHITE.

WOLFF, J. W. & RUYS, C. (1954). **Changes in the frequency of Weil's disease in Amsterdam during the last eighteen years.**—*Doc. med. geogr. trop.* **5,** 247-252. [In English. Authors' summary modified.] **1807**

The frequency of leptospira infection in Amsterdam has diminished considerably since the second world war. Water accidents, which had increased during the war, had since been much less frequent. Leptospiral infections caused by other water contacts and by occupational contact with rats showed a marked decrease.

FRUNDER, M. A. (1952). Zur Leptospirenzüchtung. **[Cultivation of leptospira.]**—*Zbl. Bakt. I. (Orig.)* **158,** 519-526. [English, French and Russian summaries.] **1808**

Optimum growth of *L. grippo-typhosa* and *L. icterohaemorrhagiae* took place at pH 7·4 in the liquid medium described by Korthof (1932). The period of optimum growth of the cultures was different for each strain of both species, but lay between 7 and 30 days. The presence of *Sarcina* sp. as a contaminant was found to enhance the growth.—A.S.

WOOD, R. M. & DAVIS, G. R. (1950). **The correlation of periodic ophthalmia with leptospira agglutinins in horses.**—*Amer. J. Ophthal.* **33,** 961-962. [Authors' summary modified.] **1809**

Agglutinins for *L. icterohaemorrhagiae* were found in high titre in the serum of 16 out of 17 horses with clinical evidence of periodic ophthalmia and in 4 out of 30 normal horses.

KOCHNEV, P. N. (1953). **[An autumn enterotoxaemia in sheep.]**—*Veterinariya, Moscow.* **30,** No. 11. p. 59. [In Russian.] **1810**

A note on enterotoxaemia in 8-month-old sheep grazing in the autumn on oat stubble that had sprouted.—F. A. ABBEY.

SEMENOV, V. I. (1953). **[Infectious enterotoxaemia of lambs and kids in winter.]**—*Veterinariya, Moscow.* **30,** No. 11. pp. 56-57. [In Russian.] **1811**

A conventional note on enterotoxaemia, in

lambs and kids, due to *Cl. welchii*. S. treated cases with 1% copper sulphate given *per os*.
—F. A. Abbey.

Roth, F. B. & Pillemer, L. (1953). **The separation of alpha toxin (lecithinase) from filtrates of** *Clostridium welchii*.—*J. Immunol.* **70,** 533-537. **1812**

Alpha toxin was separated from filtrates of *Cl. welchii* Type A by fractionation in methanol-water mixtures. Lecithinase, lethal and haemolysin activity were proportional in four fractions prepared, suggesting that a single agent may be responsible for all the properties.
—E. J. L. Soulsby.

Prévot, A.-R. & Touvenot, H. (1952). Le lait peut-il transmettre les maladies anaérobies? **[Milk as a possible vehicle of anaerobic infections.]**—*Ann. Inst. Pasteur.* **83,** 180-185. **1813**

Infections were established in g. pigs by feeding them with cultures of *Cl. welchii, Cl. septicum, Cl. chauvoei, Cl. oedematiens,* or *Cl. botulinum,* mixed with milk. Only small numbers of animals were used.—A.S.

Behrens, H. (1953). Beitrag zur Behandlung der infektiösen Schafmastitis mit Sulphonamiden. **[Treatment of infectious mastitis in sheep with sulphonamides.]**—*Dtsch. tierärztl. Wschr.* **60,** 370-372. **1814**

B. stated that mastitis of ewes is the third most important disease of sheep in the Federal (West) German Republic, where the flock morbidity rate is 15% and the mortality rate 60-80%. Staphylococci and *Past. mastitidis* are the main causal organisms. The best treatment is " supronal " (a combination of two sulphonamides) in dosage of 5 g. 12-hourly, 2–4 doses normally effecting a cure.—J. Edwards.

Rolle, M. & Mayr, A. (1953). Untersuchungen über die chronischen Eutererkrankungen der Schlachtkühe unter besonderer Berücksichtigung der Eutertuberkulose. **[Incidence of tuberculous and non-tuberculous chronic mastitis in slaughter cows.]**—*Rindertuberkulose.* **2,** 75-80. **1815**

M. tuberculosis was isolated from the udder in 138 out of 262 slaughter cows affected with chronic mastitis; in 64 of these cases streptococci were also present; and in 112 streptococci alone were isolated. Of those in which *M. tuberculosis* was present in the udder only 90 had excreted the organism in the milk; only 34 were detected at meat inspection.
—H. Behrens.

Levi, M. L., Neeman, L., Kerstein, H. & Tamarin, R. (1953). **Some aspects of brucellosis and vibriosis in cattle.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **1,** Pt. 1. 112-117. [In English. French and German summaries.] **1816**

The authors described their experience with the use of Strain 19 *Br. abortus* vaccine in Israel, the incidence of *Vibrio fetus* infection which is the commonest cause of abortion in cattle in Israel, and the treatment of semen with antibiotics as a control measure.—R.M.

Hood, S. I. (1953). La intradermo-reacción de histoplasmina en perros de la ciudad de Santiago. **[Histoplasmin reactions in dogs in Chile.]**—*Zooiatria, Chile.* **11,** No. 8. pp. 39-46. **1817**

A general account of *Histoplasma capsulatum* infection, with 18 references. None of 300 dogs selected at random in Santiago and tested with histoplasmin prepared in Uruguay gave a positive reaction; 105 of them were affected with various conditions, the rest being healthy. H. suggested, however, that further testing on a larger number of animals would be worth while, particularly in the low-lying damp areas of the country as a human case had been reported in 1952, the patient never having left Chile and having a history of a dog bite.
—F.E.W.

McKay, K. A. & Carter, G. R. (1953). **A preliminary note on the bacteriology and experimental production of infectious atrophic rhinitis of swine.** — *Vet. Med.* **48,** 351 & 368. **1818**

The authors repeatedly recovered *Pasteurella septica* and *Fusiformis necrophorus* from lesions of infectious atrophic rhinitis in pigs. Material from the lesions was injected or implanted subcutaneously and when necessary passaged in rabbits in order to eliminate saprophytes. Nasal instillation of rabbit-passaged material into young pigs often produced rhinitis.
—E. A. Hirsch.

Carter, G. R. & McKay, K. A. (1953). **A pleuropneumonia-like organism associated with infectious atrophic rhinitis of swine.**—*Canad. J. comp. Med.* **17,** 413-416. **1819**

Some of the L types referred to in previous work are believed to be pleuropneumonia-like organisms. The authors discussed cultural methods, staining and viability of the organisms. The presence of these organisms in infectious subcutaneous tissue from rabbits that had been injected with rhinitis material from

pigs indicated that they have aetiological significance. *Fusiformis necrophorus* is almost invariably associated with rhinitis and experiments with pleuropneumonia-like organisms and with this organism are in progress.

—R. GWATKIN.

SWITZER, W. P. (1953). **Studies on infectious atrophic rhinitis of swine. I. Isolation of a filterable agent from the nasal cavity of swine with infectious atrophic rhinitis.**—*J. Amer. vet. med. Ass.* **123,** 45-47. 1820

No. 02 Selas filtrate, but not Seitz or Mandler filtrates, of a suspension of mucous membrane from 2 pigs with infectious atrophic rhinitis was infective for pigs and for chick embryos. Examination of infected chick embryo material revealed the presence of bodies resembling organisms of the pleuro-pneumonia group. [The chick embryo material was not inoculated into pigs.]—R. A. HUCK.

WARNECKE, B. (1953). Bakteriologische Ultraschallstudien. **[Action of ultrasonic waves on bacteria.]** — *Z. Hyg. InfektKr.* **138,** 17-55. 1821

The author studied the action of ultrasonic waves of a field intensity of 5·5 W/cm², a frequency of 800 kilocycles and exposures for 10–150 min. on suspensions of bacteria, including *Streptococcus pyogenes, Staphylococcus aureus, Salmonella typhi, S. paratyphi B, S. typhimurium* and *Pseudomonas pyocyanea*. Increase in temperature within the range 25–42°C. increased the bactericidal effect of the waves. The extent of the bactericidal action varied with different organisms and different strains of the same organism. Some strains were apparently resistant, but changes in antigenic structure were observed following exposure. The field intensity and exposure time necessary to kill most bacteria was too high to enable ultrasonic waves to be used for therapeutic purposes *in vivo*.

—R.M.

BRYANT, M. P. & BURKEY, L. A. (1953). **Numbers and some predominant groups of bacteria in the rumen of cows fed different rations.**—*J. Dairy Sci.* **36,** 218-224. 1822

An account of studies on the ruminal flora of two cows on (1) alfalfa hay concentrate with hay *ad libitum*, (2) a maintenance ration of alfalfa hay concentrate, (3) wheat straw *ad lib.*, (4) a maintenance ration of concentrate, (5) and (6) a lower and a higher maintenance ration of alfalfa hay, respectively.

Practically all the organisms isolated were obligatory anaerobes; a few facultative anaerobic streptococci occurred on ration 4. Hydrogen sulphide-producing strains were rare except on ration 4. Counts of starch-hydrolysing organisms were low on ration 3, intermediate on rations 2, 5, 1 and 6, and high on ration 4. Counts of cellobiose-fermenting organisms were depressed on ration 4. Cellulolytic organisms were lowest in number on ration 4 and highest on ration 3. In general it appeared that the ruminal flora remained constant under a given set of conditions.—E. A. GIBSON.

BELEN'KI, N. G. (1953). **[Method of increasing the beneficial micro-organisms in the alimentary tract of calves.]**—*Veterinariya, Moscow.* **30,** No. 12. pp. 25-35. [In Russian.] 1823

In some 50,000 calves in various parts of the U.S.S.R. which had been fed 15–20 g. of finely suspended cud from healthy cows fed on good quality hay or grass at intervals of a few days for six months, there was an improvement in body wt. gains, condition and health as compared with controls; figures were shown in tables. Bowel diseases were almost completely absent in the calves so treated and B. discussed the possible explanation, assuming that there was significant effect on the intestinal flora. He gave data on the comparative numbers of the beneficial microflora and of harmful bacteria at different ages and periods after feeding. [See also POUNDEN & HIBBS, *V.B.* **20,** 474, 475 & 3310.]—F. A. ABBEY.

See also absts. **2019** (diseases in wild rabbits and hares); **2021** (depigmentation of hair in horses after strangles); **2092** (report, O.I.E.); **2102** (*V. fetus*); **2104** (bacteriological examination of preputial samples); **2132** (maintenance of bacterial cultures); **2133** (staining of mycobacteria in tissue sections); **2140** (report, Great Britain); **2141-2142** (reports, Canada); **2143** (report, Netherlands); **2144-2146** (books, bacteriology); **2147** (report, microbiology).

DISEASES CAUSED BY PROTOZOAN PARASITES

UNSWORTH, K. (1953). **Studies on *Trypanosoma vivax*. VIII. Observations on the incidence and pathogenicity of *T. vivax* in Zebu cattle in Nigeria.**—*Ann. trop. Med. Parasit.* **47,** 361-366. [Abst. from author's summary.] 1824

Examination of blood smears from 965 zebu cattle infected with trypanosomiasis in various parts of Nigeria, revealed that 69% of infestations are *T. vivax*, 26% are *T. congolense*, 0·4% are *T. brucei* and 4·8% are mixed. Among a further 123 zebu cattle exposed to tsetse in each of 7 different localities in the northern region the incidence was: *T. vivax*

82%, *T. congolense* 4%, *T. vivax* and *T. congolense* 14%.

Infections with *T. vivax* among zebu cattle grazed regularly in tsetse areas in 6 different localities in Northern Nigeria resulted in 100% mortality. The mortality among African-owned zebu cattle is not usually so great, probably because they are seldom grazed regularly in the presence of tsetse for prolonged periods. Observations made on zebu cattle infected with *T. vivax* in the laboratory showed that the strains of *T. vivax* used were highly pathogenic.

It was concluded that *T. vivax* is the commonest trypanosome species encountered in zebu cattle in Nigeria, and that it is capable of causing a high mortality.

FAIRBAIRN, H. (1953). **Studies on *Trypanosoma vivax*. IX. Morphological differences in strains and their relation to pathogenicity.**—*Ann. trop. Med. Parasit.* **47**, 394-405. [Abst. from author's summary.] **1825**

Two strains of *T. vivax* in Nigeria were transmitted through sheep by cyclically infected *Glossina palpalis*, and the strains were measured over a period of months. The mean lengths of the strains varied from 21·36 μ to 24·04 μ. The mean length of a third strain, obtained from wild *G. morsitans*, varied from 22·59 μ to 24·58 μ. Comparison of these measurements with those of a number of other strains of *T. vivax* from West and East Africa, and with those reported for further strains from Africa, Panama and Mauritius revealed that the mean lengths of the strains from West Africa were shorter than those of the usual chronic East African strains. The mammalian host also appeared to have an influence on the mean lengths of the trypanosomes. The mean length of an acute virulent East African strain was within the range of the Nigerian strains.

F. discussed the parasitaemia, clinical picture and P.M. lesions in the infected host, and suggested that there are two types or subspecies of *T. vivax*, which may explain the differing veterinary importance of *T. vivax* infections reported from West and East Africa. He discussed the relationship of *T. caprae* to *T. vivax*.

WOOLFE, G. (1953). **The trypanocidal activity of dithiobiuret derivatives.**—*Brit. J. Pharmacol.* **8**, 420-423. [Author's summary modified.] **1826**

Dithiobiuret and several derivatives were shown to possess activity against *T. congolense* when given s/c to infected mice. 1-Alkyl-1-aryl dithiobiurets were the most potent derivatives tested. Repeated dosage appeared to be necessary for the full therapeutic effect to be shown. The ratio between acute LD50 and CD50 was high for many of the compounds.

Because of the need for repeated dosage it was concluded that field use of the compounds might be difficult.

DE FREITAS, J. L. P., ROCHA, U. F., VASQUEZ, J. A. Z. & AFTIMUS, T. N. (1952). Inquérito preliminar sôbre a infecção pelo *Trypanosoma cruzi* (Chagas, 1909) entre cães e gatos domésticos no município de Campo Florido (Triângulo Mineiro), Minas Gerais, Brasil. [**Preliminary inquiry about *Trypanosoma cruzi* infection in domestic dogs and cats in Campo Florido, Minas Gerais, Brazil.**]—*Rev. Fac. Med. vet., S. Paulo.* **4**, 545-551. [English summary.] **1827**

All available dogs and cats in 68 houses and farms selected at random in Campo Florido were examined, the dogs either by "xenodiagnosis" using 5 *Triatoma* per animal, by the complement-fixation test, or by both methods, and the cats by the first method only. Of 68 houses in which dogs or cats were examined 22 had at least one animal infected with *T. cruzi*. Of 102 dogs from 29 houses, 8 gave positive results by the first method; of 47 cats from 26 houses, 12 were positive. Of 142 dogs from 48 houses, 16 were positive to the c.f. test; of 57 tested by both methods 3 and 6 respectively were found to be infected. Of 621 *Tri. infestans* caught in the houses 272 were examined and 61 were infected with *T. cruzi*.—F.E.W.

GOBLE, F. C. (1953). **Notes on chemotherapy of experimental Chagas' disease in dogs.**—*J. Parasit.* **39**, 223-224. **1828**

Primaquine [composition not given] at the rate of 105 mg./kg. delayed death and caused the trypanosomes to disappear. In two, more acute, cases 222 mg./kg. effected an apparent cure. A mixture of three quinolines at a dosage of 125 mg./kg. allowed survival with parasitaemia for over a year. Pentaquine alone was ineffective in doses below 100 mg./kg.

—JAS. G. O'SULLIVAN.

CANTRELL, W. (1953). **The effect of mapharsen on the glucose metabolism of *Trypanosoma equiperdum*.** — *J. infect. Dis.* **92**, 191-194. **1829**

When mapharsen (*m*-amino-*p*-hydroxyphenyl-arsenoxide) at 2 μM per kg. was injected i/v into rats infected with *T. equiperdum* there was no significant difference in the removal of glucose or production of pyruvic acid by the

parasites. C. suggested that mapharsen has no action on hexokinase and doubts whether it acts on glucose breakdown.—D. POYNTER.

I. MOTA, J. A. DE M. C. (1953). Contribuição para o estudo da tricomoníase bovina em Portugal. **[Trichomoniasis in cattle in Portugal.]**—*Bol. Pecuár.* **21,** 3-32. **1830**

II. PARREIRA, L. N. B., DA CRUZ, A. A. & GUERRA, F. S. (1953). A tricomoníase bovina no concelho de Almada. Relatório preliminar. **[Trichomoniasis in cattle in Almado, Portugal.]**—*Ibid.* 33-90. **1831**

III. DA CRUZ, A. A. (1953). Reconhecimento da tricomoníase bovina na área da intendência de pecuária de Coimbra. **[Trichomoniasis in the Coimbra District of Portugal.]**—*Ibid.* 91-96. **1832**

IV. DA CRUZ, A. A. (1953). A tricomoníase bovina. **[Bovine trichomoniasis.]**—*Ibid.* 97-120. **1833**

I. A general description of bovine trichomoniasis, followed by an account of an investigation into infertility in general in Portugal. The existence of trichomoniasis was confirmed there in a few cases, but it is believed that with better diagnostic facilities many more cases would be revealed.

II. A general account of bovine trichomoniasis, with special reference to methods of control, including artificial insemination. Some 60 animals were suspected of having the disease and in 6 of these the diagnosis was confirmed.

III. A report of an outbreak of trichomoniasis originating in two stud bulls belonging to an agricultural college in Coimbra.

IV. This is another general article on the symptoms, diagnosis, treatment and prophylaxis of bovine trichomoniasis.—I. W. JENNINGS.

SETINSKI, Z. (1953). Suzbijanje govede trihomonijaze na državnim poljoprovrednim dobrima. **[Control of trichomoniasis in cattle in Yugoslavia.]** — *Vet. Glasn.* **7,** 65-75. [In Croat. English summary.] **1834**

The measures adopted consisted in the intra-uterine treatment of all infected or suspected cows with Lugol's solution and the prescription of two months' sexual rest. A bull was assigned to each 25–30 cows, in order to restrict the danger in case of re-infections.

—I. MARTINI.

KERR, W. R. & ROBERTSON, M. (1953). **Active and passive sensitization of the uterus of the cow *in vivo* against *Trichomonas foetus* antigen and the evidence for the local production of antibody in that site.**—*J. Hyg., Camb.* **51,** 405-415. **1835**

The authors have demonstrated that antibodies to *Tr. foetus* can be recovered from the uterus by irrigation with saline after infection with the living organism or by instillation with antigen extracted from the organism. A local uterine reaction of the anaphylactic type consisting of an increase in size, the development of tenseness and sometimes in the outpouring of a clear mucous fluid can be evoked by the repeated instillation of antigen.

The production of high titres of antibody in the blood stream did not result in the sensitization of the uterus or in the production of free antibodies in the uterus.

There is thus clear evidence for the production of local antibody by some of the cells in the uterus.

Passive sensitization was demonstrated by the instillation into the uterus of a normal cow of serum with a high antibody titre against *Tr. foetus;* instillation of antigen 6 to 9 days later was followed by a characteristic uterine reaction.

In the course of their experiments, the authors noted that the instillation of live organisms into the uterus did not produce any infection. The successful establishment of infection seemed to require the state of oestrus in the uterus and the presence of semen.

—L. P. JOYNER.

BAKHTOV, S. G. (1953). **[Measures against trichomoniasis in cattle.]**—*Veterinariya, Moscow.* **30,** No. 12. pp. 19 - 22. [In Russian.] **1836**

B. recorded fluctuations observed in the incidence of *Tr. foetus* infection in a herd of several hundred cows over a 5-year period, and suggested the following control measures: the introduction of artificial insemination with a separate artificial vagina reserved for each bull; periodic examination of all cattle; treatment and isolation of infected cattle; and disinfection of dung, and of towels and all equipment used.

—F. A. ABBEY.

MORTELMANS, J. & VERCRUYSSE, J. (1953). Over een ongewoon uitbreken van rundercoccidiose en haar behandeling. **[An outbreak of bovine coccidiosis.]**—*Vlaam. diergeneesk. Tijdschr.* **22,** 297-305. [In Dutch. English, French and German summaries.] **1837**

An account of *Eimeria zürni* infection in a herd of 19 cattle used for the preparation of smallpox vaccine. Four acute cases were treated with sulphamethazine *per os*.—R.M.

DAVIES, S. F. M. & KENDALL, S. B. (1954). **The practical application of sulphamezathine**

therapy for caecal coccidiosis.—*Vet. Rec.* **66,** 19-21. [Authors' summary slightly modified.] **1838**

It may be concluded that an interrupted schedule of treatment consisting of two 3-day periods of treatment separated by two days without treatment is likely to be most effective in controlling mortality due to caecal coccidiosis. Treatment must be initiated at the first appearance of haemorrhage and the level of the drug must not exceed that corresponding to 0·2% of the sodium salt of sulphamethazine in the drinking water.

KRANEVELD, F. C. & MANSJOER, M. (1953). Onderzoekingen over bloedparasieten. VII. Het voorkomen van *Plasmodium gallinaceum* (Brumpt, 1935) in Indonesie. **[The distribution of *Pl. gallinaceum* in Indonesia.]**—*Hemera zoa,* **60,** 234-248. [In Dutch. English, French and German summaries.] **1839**

Examination of blood smears of domestic fowls from West Java and from Celebes confirmed the existence of *Pl. gallinaceum*. The same parasite was described by Von Prowazek in Sumatra in 1912. The sporadic incidence of the infection appeared to indicate the existence of a reservoir of infection in wild birds. The authors stated that the organism they had reported as *Haemoproteus* in Java in 1939 was probably *Pl. gallinaceum*.—C. A. VAN DORSSEN.

PETROVIĆ, K. (1953). [*Babesia* **infection in sheep in south-east Serbia.**]—*Vet. Glasn.* **7,** 23-32. [In Serbian. French summary.] **1840**

The causative agents of piroplasmosis observed in sheep in several territories of South-East Serbia were identified as *B. motasi* and *B. ovis*. The disease is transmitted by *Rhipicephalus bursa* and probably also by other species of ticks. Losses may be very severe, especially in the peracute and acute forms. Icterus, enlargement of the spleen, hyperaemic degeneration of the liver, and a watery appearance of the blood are almost constant findings on P.M. examination.—I. MARTINI.

GILLES, H. M., MAEGRAITH, B. G. & ANDREWS, W. H. HORNER. (1953). **The liver in *Babesia canis* infection.**—*Ann. trop. Med. Parasit.* **47,** 426-430. [Authors' summary modified.] **1841**

Bilirubinaemia, bilirubinuria and urobilinuria may occur during an acute attack of *B. canis* infection. The plasma-albumin concentration sometimes falls considerably, and the globulin sometimes rises. No changes in blood sugar were detected in the dogs and puppies, but in two the liver glycogen was grossly depleted. Changes in the liver varied from congestion (mostly centrilobular) to frank centrilobular necrosis.

ENIGK, K. (1953). Das Auftreten der Schafpiroplasmose in Deutschland. **[Piroplasmosis in sheep in Germany.]**—*Z. Tropenmed. u. Parasit.* **4,** 175-186. [Abst. from English summary.] **1842**

Infection of sheep with *Babesia motasi* and *Theileria recondita* is widespread in the Lueneburg heath area of Western Germany. Only after splenectomy can considerable multiplication of the parasites be seen in the blood. Thereafter, during the period of manifestation of *B. motasi,* fever, icterus, haemoglobinuria, emaciation and anaemia are observed. *B. motasi* may sometimes cause serious epidemics. Infection with *B. motasi* can be cured by chemotherapy, but not *Th. recondita* infection.

MILLER, J. G., LEVY, H. E. & OGLESBY, W. T. (1953). **A report of the screening of aralen dihydrochloride for activity against *Anaplasma marginale*.**—*Amer. J. vet. Res.* **14,** 517-519. **1843**

In contrast to previous work [see *V.B.* **20,** abst. **1928** and **21, 1003**] the authors found that 0·5 g. of aralen dihydrochloride (a quinoline derivative) given i/v daily to four cows did not alter the course of the disease. High dosage had no activity in splenectomized calves.

—D. POYNTER.

WOKE, P. A., JACOBS, L., JONES, F. E. & MELTON, M. L. (1953). **Experimental results on possible arthropod transmission of toxoplasmosis.**—*J. Parasit.* **39,** 523-532. **1844**

Of 17 blood-sucking arthropods investigated, the following nine did not transmit the toxoplasms by biting:—*Bdellonyssus bacoti, Dermanyssus gallinae, Psoroptes cuniculi, Cimex lectularius, Triatoma infestans, Culex quinquefasciatus, Pseudolynchia canariensis, Xenopsylla cheopis* and *Ctenocephalides felis*.

Rhodnius prolixus, Triatoma phyllosoma, T. pallidipennis, T. rubrofasciata and *Rhipicephalus sanguineus* retained the organisms in an infective condition but failed to transmit them by biting. *Dermacentor variabilis, D. andersoni, Amblyomma americanum* and *Pediculus humanus corporis* maintained the toxoplasms for long periods and transmitted them to laboratory animals.—JAS. G. O'SULLIVAN.

AGNESE, M. O. (1951). Sarcosporidiose cardíaca como uma das possíveis causas da doença de Adam-Stokes. Localização rara de *Sarcocystis* sp. em fibras de Purkinje. **[Cardiac**

sarcosporidiosis in cattle, with reference to infection of the Purkinje fibres.]—*Proc. Vth Congr. bras. Vet.* São Paulo, 1950. 363-368. 1845

The incidence of cardiac sarcosporidiosis in slaughter cattle in Brazil is estimated to be 92%. The author recorded the presence of sarcocysts in the Purkinje fibres of the heart muscle in one bullock and one goat. These may possibly have caused a heart-block, giving rise to the Adam-Stokes syndrome.

—I. W. Jennings.

See also abst. **2147** (report, microbiology).

DISEASES CAUSED BY VIRUSES AND RICKETTSIA

Senze, A. (1953). Pryszczyca a płodność. [**Foot and mouth disease and fertility.**]—*Méd. vét., Varsovie.* **9,** 6. [In Polish.] 1846

Of 119 cows examined during recent outbreaks of F. & M. disease in Poland 97 either failed to display normal libido or had an abnormal oestrous cycle during the first month following infection. After 6 months all but 9 had returned to normal cycle and libido, and 97 became pregnant. S. speculated on the action of the virus on the pituitary and ovaries.

—J. R. Mitchell.

Eichhorn, E. A. (1953). **Laboratory diagnosis of foot-and-mouth disease.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **1,** Pt. 1. 187-191. [In English. French and German summaries.] 1847

A discussion of *in vitro* and *in vivo* tests for the diagnosis of F. & M. disease, including the c.f. test and the inoculation of unweaned mice and rabbits.—R.M.

Guarini, G. (1952). Sulla natura degli anticorpi devianti dei sieri iperimmuni antiaftosi bovini e sulla specificità del loro supporto proteico-serico. [**The nature of complement-fixing antibodies in foot and mouth disease hyperimmune sera from cattle and the specificity of their serum protein constituents.**]—*Clin. vet., Milano.* **75,** 301-307. [English and French summaries.] 1848

G. separated monovalent and polyvalent F. & M. disease hyperimmune sera into euglobulin, pseudoglobulin, and albumin fractions by adding to them various proportions of a semi-saturated ammonium sulphate soln. or by electrophoresis. C.f. tests were performed with each of these fractions, using types A, C, or O virus as antigens. Type O virus antibodies were present in the pseudoglobulin fraction, type A virus antibodies in the euglobulin fraction, and type C virus antibodies in the albumin fraction.

—R.M.

Traub, E. & Capps, W. I. (1953). Über eine Methode zur raschen Übertragung von Maul- und Klauenseuche-Virus auf Hühnerembryonen. [**A method for quick transmission of foot and mouth disease virus to chick embryos.**] — *Tierärztl. Umsch.* **8,** 430-432. 1849

The South American Strain O_3 of F. & M. disease virus has been adapted to 10–11-day-old chick embryos by alternate passage through immature mice. Preliminary experiments with the local Strain A appear promising.

—W. G. Siller.

Henderson, W. M. (1953). **The use of virus culture in foot-and-mouth disease research.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **1,** Pt. 1. 191-195. [In English. French and German summaries.] 1850

H. described recent work with tissue cultures on the multiplication of F. & M. disease virus, and the large-scale production of vaccines.—R.M.

Skinner, H. H. (1953). **One week old white mice as test animals in foot-and-mouth disease research.**—*Proc. XVth Int. vet Congr. Stockholm.* 1953. **1,** Pt. 1. 195-199. [In English. French and German summaries.] 1851

S. described experimental procedure using mice for the titration of F. & M. disease virus and for estimating the neutralizing activity of immune sera. [See also *V.B.* **22,** 2456 and **23,** 415.]—R.M.

Röhrer, H. (1953). Das Maul- und Klauenseuche-Virus im Mäusegehirn. [**Passage of foot and mouth disease virus in the mouse brain.**]—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **1,** Pt. 1. 200-204. [In German. English and French summaries.] 1852

The s/c injection of F. & M. disease virus collected between the 50th and 98th passage in the brains of mice afforded complete protection of cattle against artificial infection with the homologous strain of virus. Typical aphthae resulted when the passaged virus was inoculated i/d into the tongue of cattle.—R.M.

CAMARGO, N. F. & MOTT, L. O. (1953). **The first year's production and testing of twelve million doses of foot-and-mouth disease vaccine by the Mexican-United States Commission for the eradication of Foot-and-Mouth Disease.**—*Bull. Off. int. Epiz.* **39,** 435-446. [In English.] **1853**

The authors outlined the history and progress of F. & M. disease vaccine production in 10 different centres which have been set up in Mexico. They gave details of the technique employed and of some data obtained including the relationship between intradermo-lingual and contact exposure. The s/c method of vaccination was found to be slightly superior to the i/d method. No relationship could be found between immunity and persistence of vaccination nodules. They gave an account of typing studies by Galloway. The effect of storage temperature on vaccine was being studied.

—G. V. LAUGIER.

REPPIN, K. (1954). Die Bedeutung der Vakzine für die Bekämpfung der Maul- und Klauenseuche. **[The importance of vaccines in the control of foot and mouth disease.]**—*Dtsch. tierärztl. Wschr.* **61,** 49-52. **1854**

R. described some outbreaks of F. & M. disease in the district of Lüneburg and emphasized the value of vaccine in curtailing the spread. He illustrated the disastrous effects of shortage of strain-specific vaccines.

—W. G. SILLER.

GEIGER, W. (1953). Wertigkeitsprüfungen trivalenter MKS-Vakzinen. **[The efficiency of trivalent foot and mouth disease vaccines.]**—*Dtsch. tierärztl. Wschr.* **60,** 322-324. **1855**

In efficiency tests with trivalent F. & M. disease vaccine carried out in 44 cattle with 22 controls, two groups being given 2% and four groups 3% vaccine; 30 or 45 ml. of 2% vaccine was ineffective, but 30 ml. of vaccine containing 3% virus (1% of each type) afforded protection against individual challenges with each of the three types of virus A, O and C.

—W. G. SILLER.

DEDIÉ, K. & SCHMIDT, U. (1953). Zur immunisierenden Wirkung des im Brutei gezüchteten Maul- und Klauenseuchevirus. (Mit Filmvorführung.) **[Chick embryo passaged virus for immunization against foot and mouth disease.]**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **1,** Pt. 1. 205-208. [In German. English and French summaries.] **1856**

The authors cultivated F. & M. disease virus, Type O, in fowl embryos. After passage in more than 300 eggs the virus was not pathogenic for g. pigs, pigs, and cattle, but possessed very little immunizing capacity. The concentration of virus in the vaccine obtained was too low to provide immunity in cattle.

—R.M.

HOBOHM, K. O., PETERMANN, H. G. & FORREST, G. E. (1952). Elution und Nachweis des komplementbindenden Antigens in Adsorbatvaccinen gegen Maul- und Klauenseuche. **[Demonstration of the complement-fixing antigen in adsorbate vaccines against foot and mouth disease.]**—*Zbl. Bakt. I. (Orig.)* **157,** 556-561. [English, French and Russian summaries. Abst. from English summary.] **1857**

The authors eluted and concentrated the type-specific complement-fixing antigens present in F. & M. disease vaccines. They considered that it would be useful to develop these methods and to use them to investigate the value of vaccines.

HELL, H. (1954). Aktuelle Wutprobleme. **[The problem of rabies control.]**—*Wien. tierärztl. Mschr.* **41,** 1-10. [English summary.] **1858**

H. discussed the incidence in Austria of rabies in man and animals, the present difficulties of eradication, especially in wild animals, and the various methods of active and passive immunization.—W. G. SILLER.

WIKTOR, T. J. (1953). Trois années de vaccination antirabique des chiens à Stanleyville. **[Vaccination of dogs against rabies in the Belgian Congo.]**—*Bull. agric. Congo. belge.* **44,** 629-632. [In French.] **1859**

A report on rabies vaccination of dogs in Stanleyville, from 1949-52. Over 1,190 vaccinations were done, with a phenolized sheep brain vaccine (Fermi). No cases of rabies were observed in vaccinated dogs whereas 39 cases occurred in unvaccinated dogs during the same period.—J.D.

MCFADZEAN, A. J. S. & CHOA, G. H. (1953). **The neuroparalytic accidents of antirabies vaccination.**—*Trans. R. Soc. trop. Med. Hyg.* **47,** 372-386. **1860**

Of 14,119 human patients given the Semple antirabies vaccine in Hong Kong between 1949-52, neuroparalytic accidents of the acute perivascular myelinoclastic type are known to have occurred in 12, and of the polyradiculoneuronitic type in 5. Treatment with diphenhydramine was without effect but a satisfactory response occurred in the 3 patients of the first type treated with A.C.T.H. The authors discussed the pathogenesis of these neuroparalytic accidents.—A. ACKROYD.

Polson, A. & Wessels, P. (1953). **Particle size of soluble antigen of rabies virus.**—*Proc. Soc. exp. Biol., N.Y.* **84,** 317-320. [Authors' summary modified.] **1861**

A particle size of 12 mμ was determined by a method of diffusion coupled with biological assay for the soluble antigen of rabies extracted from the brains of unweaned mice infected with the Flury strain. This value agrees with that calculated from the approximate sedimentation constant calculated from the sedimentation rate in the swinging bucket rotor of the Spinco ultracentrifuge.

No conclusions regarding the homogeneity of the soluble antigen can be drawn at this stage.

Anon. (1954). **Prolonged generalised vaccinia.**—*Lancet.* **266,** 36-37. **1862**

A note on the incidence and characteristics of prolonged generalized vaccinia occurring in human beings as a complication of smallpox vaccination.—R.M.

Cilli, V. & Ortenzi, R. (1953). Sulla titolazione del virus contenuto nella linfa del vaiolo ovino mediante il metodo di Blanc e Martin. **[Titration of sheep pox virus by the method described by Blanc and Martin.]** —*Zooprofilassi.* **8,** 129-134 & 137-140. [English, French and Spanish summaries.] **1863**

The authors determined the neutralizing activity of sheep pox antisera, using the method described by Blanc & Martin [*V.B.* **9,** p. 625]. —I. Martini.

McLean, D. M. (1953). **The behaviour of Murray Valley encephalitis virus in young chickens.**—*Aust. J. exp. Biol. med. Sci.* **31,** 491-503. [Author's summary modified.] **1864**

Young chickens regularly developed a viraemia following s/c injection with Murray Valley encephalitis (MVE) virus. The titre is sufficiently high to infect mosquitoes. Infection of chickens did not produce recognizable clinical signs. Antibody was regularly produced following inoculation of live virus into chickens of various ages. Experimental results agreed with previously reported field observations on fowls following the 1951 MVE epidemic in the Murray Valley.

Work, T. H., Hurlbut, H. S. & Taylor, R. M. (1953). **Isolation of West Nile virus from hooded crow and rock pigeon in the Nile delta.**—*Proc. Soc. exp. Biol., N.Y.* **84,** 719-722. [Authors' summary modified.] **1865**

Strains of West Nile virus were isolated from the blood of two wild pigeons, *Columba livia,* and one hooded crow, *Corvus corone sardonius,* in an endemic area of the Nile Delta of Egypt in July and August 1953. The virus was also obtained from the brain and spleen of one of the pigeons. The authors discussed the possible role of wild birds in the transmission of arthropod-borne virus encephalitis.

Dougherty, E. & Saunders, L. Z. (1953). **Meningo-encephalitis in pigeons.**—*Amer. J. Path.* **29,** 1165-1173. [Authors' summary copied *verbatim.*] **1866**

A syndrome characterized by torticollis, ataxia, and eventual prostration was observed as an enzootic disease of 3 months' duration in a large flock of pigeons. The disease was self-limiting, and less than 1 per cent of the flock was affected. Non-suppurative, demyelinating meningo-encephalitis was present in the brains of affected birds. The lesions were suggestive of a viral etiology, but no infectious agent could be isolated or demonstrated histologically and the cause remained undetermined. Comparison of the condition with other nervous diseases of pigeons indicated that this disease entity has not been described previously.

Pond, W. L., Russ, S. B. & Warren, J. (1953). **The Russian spring-summer encephalitis and louping ill group of viruses; relationship of European and Asiatic strains of Russian spring-summer encephalitis viruses and louping ill virus.**—*J. infect. Dis.* **93,** 294-300. [Authors' summary modified.] **1867**

The authors found a close serological and immunological similarity between the viruses of Russian spring-summer encephalitis (RSSE) of human and arthropod origin, and louping-ill. Several strains of RSSE virus, louping-ill virus and the virus isolated from a Czech epidemic of encephalitis form a homogeneous group.

Immunization of mice with a killed vaccine made from a RSSE virus strain or the Czech encephalitis virus strain produced resistance to the heterologous as well as to the homologous virus.

Inoculation of man with a killed RSSE vaccine, mouse brain type, elicited neutralizing antibodies against louping-ill and Czech encephalitis viruses as well as against the RSSE viruses.

In view of the very close and uniform antigenic composition of all of these arthropod-borne agents, the authors suggested that they be considered as strains of a single virus.

Melnick, J. L. & Kaplan, A. S. (1953). **Quantitative studies of the virus-host relation-**

ship in chimpanzees after inapparent infection with Coxsackie viruses. I. The virus carrier state and the development of neutralizing antibodies.—*J. exp. Med.* 97, 367-400. 1868

Eight chimpanzees were used in cross-infection experiments with 10 antigenically distinct Coxsackie viruses and 3 strains of poliomyelitis virus. Throat swabs, faeces and blood were examined quantitatively for virus and neutralizing antibodies.—Ian Davidson.

von Sprockhoff, H. (1953). Der Stand unserer derzeitigen Kenntnisse über die Borna'sche Krankheit. **[Borna disease.]**—*Berl. Münch. tierärztl. Wschr.* 66, 368-371. [English summary.] 1869

The epidemiology of Borna disease is still unknown. Examination of the blood picture (lymphopenia) and of the c.s.f. (pleocytosis) has made the diagnosis a little more certain. The virus is virulent even after storage for 17 years. All attempts to culture the virus have failed. Chemotherapy is ineffective and the disease is prevented by active immunization of horses with a brain vaccine prepared in rabbits.

—H. Behrens.

Matthias, D. (1953). Beitrag zum Infektionsmodus der Bornaschen Krankheit der Pferde. **[Mode of infection in Borna disease.]**—*Arch. exp. VetMed.* 7, 313-318. 1870

Blood taken at intervals of 24 hours from horses experimentally infected with Borna disease virus was injected intracerebrally in doses of 0·5 ml. into 197 rabbits of which 87 died, 59 of them later than 3 weeks after infection. The survivors kept under observation for a period of 3 months failed to develop clinical signs of Borna disease. There were no lesions, either histologically or macroscopically discernible, in the brain in those which had died.

From these experiments M. concluded that Borna disease is not transmitted by blood-sucking arthropods as is the case in equine encephalomyelitis occurring in America.—E.G.

Altara, I., Serra, A. & Guarini, G. (1954). Die Anwendung der Komplementablenkungsmethode in der Diagnostik der infektiösen Anämie der Einhufer. **[The complement-fixation method for the diagnosis of equine infectious anaemia.]**—*Wien. tierärztl. Mschr.* 41, 35-43. 1871

A modified c.f. test for equine infectious anaemia was studied using the serum of 56 affected horses. In 54 the test was positive and two were doubtful. Sera of 76 healthy horses gave negative reactions.—W. G. Siller.

Placidi, L. & Verge, J. (1953). Essai de transmission au singe du virus de l'anémie infectieuse des équidés (maladie de Vallée et Carré). **[Attempts to transmit to monkeys the virus of equine infectious anaemia.]**—*C. R. Acad. Sci., Paris.* 237, 1041-1043. 1872

An attempt to infect one rhesus monkey (*Macaca mulatta*) with virus suspension apparently failed, but succeeded on 3 further monkeys with blood from an infected horse, and was re-transmitted to another monkey.

—R. B. Holcombe.

Serra, A. & Bonfante, G. (1953). Primi risultati di tentativi terapeutici dell'anemia infettiva degli equini. (Nota preventiva.) **[Treatment of equine infectious anaemia with a liver extract.]**—*Atti Soc. ital. Sci. vet., Sanremo,* 1952. 6, pp. 589-595. Discussion pp. 595-597. [English and French summaries.] 1873

Very encouraging results were obtained in the treatment of equine infectious anaemia by intramuscular injections, every second day over 40 days, of a liver extract with "certain characteristics and biological activity" (no details). Sixteen out of 20 animals recovered. There were two recurrences after 9 months, but one of these cases recovered after further treatment.

In the discussion various theories were put forward about the possible factors in the liver extract responsible for the cure.

—I. W. Jennings.

Miura, S. *et al.* (1952). **[Therapeutical experiment on equine infectious anemia with paramethyl-benzol-sulfonamide and vitamin K.]**—*J. Jap. vet. med. Ass.* 5, 177-181. 1874

Combined treatment of two cases of subacute equine infectious anaemia with 65 and 135 g. of *p*-methyl-benzol-sulphonamide and with 5,000 and 11,000 mg. of vitamin K respectively, and of one chronic case with 10,000 mg. of vitamin K alone was ineffective.

— Kogi Saito.

McIntosh, B. M. (1953). **The isolation of virus in mice from cases of horsesickness in immunized horses.**—*Onderstepoort J. vet. Res.* 26, 183-195. [Author's abst.] 1875

Deals with the difficulty, often encountered, of isolating virus in mice from breakdown cases of African horsesickness in immunized horses. Blood drawn from an immunized horse at the height of the breakdown reaction contains virus which is fully infective for susceptible horses, dogs and ferrets, but very often it will not infect mice. It is believed that the serum antibodies

produced as a result of immunization interfere with the isolation of virus in the brain of the mouse. It was shown that the ferret, and probably also the dog, may be used to isolate virus, from which animal adaptation to the mouse is a simple matter. The disease in ferrets is mild, resulting in a febrile reaction with viraemia. By means of neutralization tests in mice with the neurotropic form of a virus which produced a fatal breakdown in an immunized horse it was shown that such immune horses may react severely to infection with virus which is related antigenically to strains of virus incorporated in the vaccine.

Polson, A., van Rooy, P. J., Lawrence, S. M. & Dent, J. (1953). **The stability of neurotropic African horsesickness virus in solutions of different chemical composition.**—*Onderstepoort J. vet. Res.* **26**, 197-206. [Authors' summary modified.] **1876**

The viability of neurotropic African horsesickness virus was tested in media containing various salts, different amino acids, gelatin, " dextran " (plasma substitute), chick embryo extract, serum saline and egg white. Of these, egg white was the medium of choice for storage of virus in a viable state. The virus of African horsesickness showed distinct levels of stability in the various media, the highest being found in suspensions containing 10% egg white, followed by 10% serum saline and 5% egg white solutions. Suspensions made up in amino acids, gelatin and embryo extract had lower levels of stability. Suspensions in salt solutions and in solutions of " dextran " had a very low level of stability.

Piercy, S. E. (1953). **Some recent experiments with lapinised rinderpest vaccine in East Africa.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **1**, Pt. 1. 278-283. [In English. French and German summaries.] **1877**

Immunity to rinderpest lasted for at least 19 months after inoculation of lapinized virus. Dried vaccine could be kept for 3 months at 4°C. without loss of immunizing activity. Lapinized vaccine was not effective in controlling an outbreak of rinderpest in cattle which had been inoculated with inactivated spleen vaccine 9 months previously.—R.M.

Rajagopal Rao, R. (1952). **' Sulphamezathine ' treatment of bovine rinderpest.**—*Indian vet. J.* **29**, 249-251. **1878**

The author suggested that [presumably in cattle of low susceptibility to rinderpest] such treatment can be of value by suppressing the common organisms causing secondary infection.
—D. D. Nagpal.

Andersson, P. (1953). Ett fall av elakartad katarralfeber hos älg. **[Bovine malignant catarrh in an elk.]**—*Nord. VetMed.* **5**, 847-854. [In Swedish. English and German summaries.] **1879**

An account of bovine malignant catarrh in an elk calf which died in the Helsingfors zoo. It was considered probable that it had been infected by Mouflon sheep in an adjoining enclosure. The lesions were similar to those found in cattle. The author gave a chart showing the species belonging to the families included under the sub-order Artiodactyla in which the disease has been reported, and gave references.—R. B. Holcombe.

Ishii, S. (1952). **[The hematological observation of so-called " bovine influenza ".]**—*J. Jap. vet. med. Ass.* **5**, 244-249. **1880**

Haematological study in 21 spontaneous cases of so-called " bovine influenza " and in 20 experimentally infected cattle revealed a temporary leucocytosis, especially a marked increase in polymorphonuclear neutrophiles at the febrile stage; and anaemia, leucopenia and monocytosis at the following stage.
—Kogi Saito.

Piercy, S. E. (1954). **Bovine infectious petechial fever.**—*E. Afr. agric. J.* **19**, 65-68. **1881**

P. described a disease which received much attention from the late W. B. C. Danks at Kabete, Kenya, in the years before the second world war. This disease is responsible for sporadic deaths in high-grade and pure-bred cattle in the uplands area of Kenya Colony. The causal agent is present in the blood and passes a Chamberland L3 candle. It becomes inactivated after storage for 10 days in the refrigerator. The disease is difficult to transmit because only mild or imperceptible reactions are provoked in low-grade cattle of the type usually available for experiment and although reactions are sometimes produced in sheep, dogs and rabbits, these animals do not respond uniformly. Continuous needle passage may attenuate the virus although it also reduces the infective dose of blood.

The symptoms are high fever, anorexia and a sudden fall in milk yield. Soon afterwards a watery discharge from the eyes appears and petechiae may be seen inside the lips, gums and vulva. Bleeding from the nose may occur and severe cases pass dark, tarry faeces. Swel-

ling and protrusion of the conjunctiva, and gelatinous oedema may be present and occasionally there is haemorrhage into the anterior chamber of the eye. Pregnant animals may abort.

On P.M. examination petechiae are found throughout the alimentary tract, on the epicardium and endocardium and in the subcutaneous and muscular tissues. The mucosa of the abomasum may be diffusely congested. The lymph nodes are dark, swollen and haemorrhagic. The clotting time of the blood is delayed.

Clinically the slow i/v injection of 3–5 ml. of turpentine has long been regarded as the most satisfactory treatment.

Immunity following a definite reaction has been found to last two years and it would appear that cattle bred on farms where the disease occurs are resistant.—J. R. Hudson.

van der Linde, N. T. (1953). **A recent epidemic of Rift Valley fever in the Orange Free State.**—*J. S. Afr. vet. med. Ass.* **24**, 145-148. **1882**

The author gave an outline of the spread of an epidemic of Rift Valley fever and recorded the following features:—rapid decomposition of carcasses, haemorrhagic necrotic hepatitis, swelling of the spleen, haemorrhagic lymph nodes, haemorrhagic cholecystitis, haemorrhagic nephritis, renal fat degeneration, perforation of the abomasum and caecum in lambs, endo- and epicardial haemorrhages.

The course and symptoms of the disease corresponded to those noted in the 1950-51 outbreak.—W. S. Marshall.

Mortelmans, J. & Vercruysse, J. (1953). Au sujet de l'ecthyma contagieux chez les moutons et les chèvres du nord-ouest du Ruanda et son traitement par la pénicilline. **[Penicillin treatment of contagious pustular dermatitis of sheep and goats.]**—*Bull. agric. Congo belge.* **44**, 621-628. [In French. Flemish summary.] **1883**

Trials with penicillin in the treatment of contagious pustular dermatitis in sheep and goats were successful even in cases complicated with stomatitis or enteritis. Vaccination is of some value in large flocks.—J.D.

Pallaske, G. (1954). Beitrag zur sogenannten Lungenadenomatose der Schafe. **[So-called adenomatosis of the lungs (jaagziekte) in sheep.]**—*Berl. Münch. tierärztl. Wschr.* **67**, 23-25. [English summary.] **1884**

P. reported an outbreak of jaagziekte in housed sheep, in which 5% of the affected flock either died or had to be slaughtered. He described the macroscopic and histological findings and discussed the possible aetiology with particular reference to a pneumotropic virus. —W. G. Siller.

Mitscherlich, E. (1954). Der Virusabort des Schafes in Deutschland. **[Virus abortion of sheep in Germany.]**—*Dtsch. tierärztl. Wschr.* **61**, 42-45. **1885**

M. described the clinical and pathological features of natural outbreaks of virus abortion in two flocks of sheep and the serological and animal inoculation tests carried out. This is the first report of this disease in Germany. —W. G. Siller.

Fischer, K. & Starke, G. (1951). Liquoruntersuchungen bei der Poliomyelitis der Schweine. **[Examination of the cerebrospinal fluid in porcine encephalomyelitis.]** —*Exp. VetMed.* **5**, pp. 38-46. **1886**

Cell counts, protein and sugar assays and colloid reactions were carried out on the c.s.f. of young pigs infected with Teschen disease, the normal values being determined in 20 healthy animals. A high cell count—only mononuclears—was always obtained during the first days of the paralytic stage and the protein content was increased. The normal cell count was 1–14/3, and the count on the first day of paralysis 170–2,531/3. [The expression " /3 " indicates that counts represent the number of cells in 3 cu.mm.] Normal protein levels were 1·0–1·2 mg.%; on the first day of paralysis 1·8–8·0 mg.%. Neither sugar nor colloid reactions followed uniform patterns. How far these findings can be used for differential diagnosis remains to be investigated.—A. Mayr-Harting.

Hecke, F. (1952). Eine Methode zur Auswertung quantitativer Tierversuche zwecks Errechnung stummer Infektionen bei der ansteckenden Schweinelähmung (Teschener Krankheit) und ihre praktische Bedeutung. **[Methods for detecting sub-clinical infection in outbreaks of Teschen disease.]**—*Arch. exp. VetMed.* **6**, 308-317. **1887**

Statistical treatment of experimental data revealed that latent immunizing infections occur more frequently than might be supposed. In practice it is possible that most pigs only receive small quantities of virus without developing clinical symptoms. Because such animals can excrete the virus the disease might become endemic. It is therefore necessary to use stamping out methods in the first outbreaks to occur in a clean district. Otherwise vaccination is indicated.—H. Behrens.

Mott, L. O., Patterson, W. C., Songer, J. R. & Hopkins, S. R. (1953). **Experimental infections with vesicular exanthema.**—*N. Amer. Vet.* **34**, 782. **1888**

This is a preliminary report and no details of the experiments are given. Direct contact with infected pigs produced lesions of vesicular exanthema in 83% of pigs exposed, 13% developed an inapparent infection and 4% remained healthy. Transmission of the disease by indirect contact was successful in only one case. Healthy pigs fed tissues from infected ones developed lesions in from 40 hours to 8 days. Such samples of tissue could be stored for 2–4 weeks at 7°C. and still produce overt disease or inapparent infection. The difference in susceptibility of pigs to infection by different routes is indicated by the fact that 100–1,000 times as much virus is required to infect by feeding, and 10–100 times as much by s/c or i/v inoculation, as by the i/d inoculation of the snout.—J. B. Brooksby.

Lequin, P. (1952). Guérison d'un cas de dry-distemper par la chloromycétine. **[Successful treatment of a case of " dry distemper " with chloramphenicol.]** — *Bull. Soc. Sci. vét., Lyon.* **53**, 69-72. **1889**

An account of a case considered to be " dry distemper " [as described by Pugh, *V.B.* **8**, p. 242] in a 5-month-old dog following vaccination against distemper by the Laidlaw-Dunkin method. Penicillin-sulphadimerazine therapy failed and was replaced by chloramphenicol with good results.

—Barbara G. Clarke.

Berg, O. A. (1953). Hvalpesykevaksine, fremstillet på embryonerte egg. **[An avianized distemper vaccine.]**—*Nord. VetMed.* **5**, 663-669. [In Norwegian. English and German summaries.] **1890**

A report on an apparently successful trial of an American proprietary avianized canine distemper vaccine on 4 ferrets and 98 dogs.

—R. B. Holcombe.

Winship, T. (1953). **Pathologic changes in so-called cat-scratch fever. Review of findings in lymph nodes of 29 patients and cutaneous lesions of 2 patients.**—*Amer. J. clin. Path.* **23**, 1012-1018. [Abst. from author's summary.] **1891**

So-called cat-scratch fever appears to have no significant geographical, racial or seasonal incidence. A well-developed lesion characteristically consists of multiple abscesses composed of necrotic centres surrounded by a zone of epithelioid cells and scattered giant cells. The histological appearance of the skin lesions and lymph nodes is suggestive, but not pathognomonic, and may be mistaken for tularaemia, lymphogranuloma venereum, or sporotrichosis.

Filmer, J. F. (1953). **Disappointing tests of myxomatosis as rabbit control.**—*N.Z. J. Agric.* **87**, 402-404. **1892**

Rabbits infected with myxomatosis were released in 21 separate areas of New Zealand during the summer of 1951-52. Decrease in the rabbit population as a result of myxomatosis was observed in only 6 of these areas, and the disease did not spread outside the areas. During the summer of 1952-53 more infected rabbits were released in 8 areas, with equally disappointing results.—R.M.

Magallon, P., Bazin, O. & Bazin, J. (1953). La myxomatose du lièvre. **[Myxomatosis in the hare.]**—*Bull. Off. int. Epiz.* **39**, 765-769. **1893**

A natural case in a hare was described. The hare was blind when found by a man cutting grass near Grenoble. The lesions were typical. A rabbit inoculated with material from the hare developed myxomatosis. A g. pig inoculated with the same material did not develop the disease nor could virus be recovered from it later.—M.C.

Jacotot, H., Vallée, A. & Virat, B. (1953). Étude expérimentale de la myxomatose. (Première note.) **[Experimental myxomatosis.]**—*Bull. Acad. vét. Fr.* **26**, 431-441. Discussion: pp. 441-444. **1894**

Observations of a number of different features of the disease are recorded, such as the limits of the incubation period following different routes of infection and variations in symptoms. Diagnosis in a skinned carcass is difficult. No differences were detected between a wild strain from Rambouillet and one received from Australia. Three out of 250 tame rabbits recovered after experimental infection. Attempts to infect two rabbits by instillation of virus into the conjunctival sac failed and both rabbits succumbed to a challenge infection by the s/c route. Very irregular results were obtained in contact transmission experiments. Attempts to infect hamsters, ferrets and hedgehogs and two hares failed. A natural case of the disease in a hare which was killed in the Vendôme area was studied. The lesions were typical and infection was transmitted to a rabbit by inoculation. Ticks collected from the hare were proved to be infective by inoculation of rabbits.—M.C.

Schäfer, W. (1953). Über den Ablauf der Virusvermehrung. — Modelluntersuchungen mit dem Erreger der klassischen Geflügelpest. **[Virus multiplication in fowl plague.]**—*Proc. XVth Int. vet. Congr. Stockholm.* **1953. 1,** Pt. 1. 228-233. [In German. English and French summaries.] **1895**

S. studied multiplication of the fowl plague virus, cultivated in fowl embryos, by means of electron microscopy and ultra-centrifugation. He described 3 developmental forms of the virus (elementary bodies, an immature form of the latter, and soluble antigen) and long filaments, the significance of which was not determined.—R.M.

Mitscherlich, E. & Gürtürk, S. (1952). Die serologische Untersuchung von Organextrakten gestorbener Hühner auf klassische und atypische Geflügelpest (Newcastle - Krankheit). **[Serological examination of extracts prepared from organs of fowls which had died of fowl plague or Newcastle disease.]**—*Dtsch. tierärztl. Wschr.* **59,** 371-372. **1896**

The authors described a method of diagnosing fowl plague and Newcastle disease by the haemagglutination-inhibition test using extracts prepared from heart muscle, liver or spleen of suspected carcasses. Extracts were prepared from 2 g. of ground organ tissue soaked overnight at low temperature in 4 ml. of physiological saline. The supernatant fluid after centrifugation was used as extract. These extracts were examined for specific antibodies.

The virus material consisted of blood-corpuscle free allantoic fluid from infected chick embryos.

In the H.I. test 0·25 ml. of each of the extract dilutions were put into test tubes, and 0·25 ml. of virus material added, left for 10 min. and 0·25 ml. of a 0·5% fowl erythrocyte suspension added, left for a further 15 min. at room temperature and results read under a low-magnification microscope.

There are two tables, one giving results of H.I. tests of 439 organ extracts from infected fowls and 334 extracts from healthy controls, and the other of percentages of positive cases diagnosed by the H.I. method.—E.G.

Siegmann, O. & Woernle, H. (1952/53). Untersuchungen zur Diagnostik und Epizootologie der Geflügelpest. **[Diagnosis and epidemiology of fowl plague (Newcastle disease).]**—*Arch. exp. VetMed.* **6,** 348-362. **1897**

The authors described in detail the methods by which the haemagglutination and haemagglutination-inhibition tests, using coagulated heart blood, resuspended in normal saline, may be utilized for the P.M. diagnosis of Newcastle disease. They also gave some details of the epidemiology of the disease and of its occurrence in man. [See also *V.B.* **23,** 201.]

—W. G. Siller.

Groupé, V., Pugh, L. H. & Levine, A. S. (1953). **Mechanism of suppression of non-transmissible pneumonia in mice induced by Newcastle disease virus.**—*Science.* **118,** 187-190. **1898**

A non-transmissible pneumonia in mice, induced by Newcastle disease virus (NDV) was suppressed by a culture filtrate of *Achromobacter* (APM) injected when the pneumonia was developing rapidly. The infective titre of lung tissue was unchanged. APM was somewhat less effective when the NDV was diluted.

The authors discussed the possibility of the two agents competing for a cellular constituent.

—Ian Davidson.

Beller, K. (1953). Über Geflügelpest. **[Fowl plague and Newcastle disease.]**—*Proc. XVth Int. vet. Congr. Stockholm.* **1953. 1,** Pt. 1. 243-246. [In German. English and French summaries.] **1899**

B. compared the immunology and epidemiology of fowl plague with that of Newcastle disease.—R.M.

Jezierski, A. (1953). Vaccins contre la peste aviaire et la maladie de Newcastle. **[Vaccines against fowl plague and Newcastle disease.]**—*Schweiz. Arch. Tierheilk.* **95,** 619-626. [In French.] **1900**

A general account, with particular reference to the preparation and use of killed and living vaccines, with a note on J.'s own experience in the control of outbreaks of Newcastle disease using live attenuated vaccine, together with a list of general recommendations.

—H. Boyd.

Bodon, L. (1953). **[The immunizing and haemagglutinating properties of Newcastle disease virus.]**—*Acta vet. hung.* **3,** 55-62. [French summary.] **1901**

B. compared the infective properties of Hertfordshire strain N.D.V. with its haemagglutinating properties. He concluded that these two properties were unrelated, since virus treated with heat or formalin until it was no longer capable of infecting fowls retained its power to agglutinate r.b.c.—R.M.

Dedié, K. & Starke, G. (1952). Untersuchungen zur Immunisierung gegen die atypische Geflügelpest. I. Über Herstellung und Wirksamkeit inaktivierter Ei-Adsorbat-Vakzinen. **[Immunization against Newcastle disease with a formol adsorbate vaccine.]**—*Arch. exp. VetMed.* **6**, 235-248. **1902**

Immunization tests against Newcastle disease were carried out using formolized aluminium hydroxide adsorbed vaccine. The source of virus was chorio-allantoic fluid and embryonic membrane extract. The vaccine contained 25% aluminium hydroxide and 0·025% formalin. The most efficient dosage is 0·03 ml. subcutaneously.—W. J. Siller.

Mohr, F. (1953). Die Hühnerpestneuritis. (Ein Beitrag zur Differentialdiagnose: Atypische Geflügelpest-Mareksche Geflügellähme.) **Differential diagnosis of Newcastle disease and fowl paralysis.]**—*Berl. Münch. tierärztl. Wschr.* **66**, 205-208. [English summary. **1903**

The nervous form of Newcastle disease may be differentiated P.M. from fowl paralysis by the very characteristic nodular lymphocytic pulmonary infiltrations, the central nervous and reticulo-endothelial reactions and by serological methods. Macroscopic and histological examination of nerves is not sufficient.

—W. G. Siller.

Weidenmüller, H. & Osthoff, F. (1953). Untersuchungen über die atypische Hühnerpest beim Fasan. **[Newcastle disease in pheasants.]** — *Zbl. VetMed.* **1**, 105-113. [English and French summaries.] **1904**

An account of an outbreak of an infectious disease characterized by nervous symptoms and a high mortality in some 400 pheasants. P.M. and histological findings were suggestive of Newcastle disease, which was confirmed by the haemagglutination-inhibition test.

—W. G. Siller.

Lührs. (1954). Verhütung und Behandlung des Schnupfens des Geflügels. **[Prevention and treatment of fowl coryza.]** — *Prakt. Tierarzt.* No. 1. 10-12. **1905**

Fowl coryza occurs when the birds' resistance is lowered by adverse climatic, dietetic and parasitic conditions. Good hygiene will therefore prevent it. "Bulbur," a complex dye containing citric acid and iodine, has been found satisfactory for treatment.

—W. G. Siller.

Fritzsche, K. (1954). Versuche über die Wirksamkeit des Chloramphenicols bei der Bekämpfung des ansteckenden Geflügelschnupfens. **[Effect of chloramphenicol in the control of fowl coryza.]**—*Berl. Münch. tierärztl. Wschr.* **67**, 26-29. [English summary.] **1906**

Of 30 pullets affected with fowl coryza, treated with vitamin A and a chloramphenicol preparation, "paraxin" *per os* at a dosage of 0·25–0·5 g., 28 recovered rapidly; two which were emaciated died. Repeated i/m administration of 0·0025–0·01 g. did not cure coryza rapidly.—W. G. Siller.

Dinter, Z., Hanko, E. & Plazikowski, U. (1953). Die Psittakose in Stockholm. **[Psittacosis in Stockholm.]**—*Nord. VetMed.* **5**, 447-453. [In German. English and Swedish summaries.] **1907**

After 4 people in Stockholm had contracted psittacosis, the virus was isolated, using mice, from a parrot which died spontaneously, and from killed clinically normal parakeets. The authors gave an account of the results of the epidemiological investigations, the lesions and histological findings in the dead parrot, and the virological investigation. As a rule intracerebral and not intraperitoneal inoculation produced the disease in mice.—R. B. Holcombe.

Mutsaars, W. (1953). Rôle du phosphore dans le développement de la résistance du bactériophage aux rayons ultra-violets. **[Role of phosphorus in resistance of bacteriophage to ultra-violet light.]**—*Ann. Inst. Pasteur.* **85**, 1-22. **1908**

The resistance of *Bact. coli* bacteriophages of the phi-N, T2, T4 and T6 types to ultra-violet rays was enhanced when various organic or inorganic phosphorus salts were added to the medium. The T1, T3 and T7 types had an increased resistance in media poor in phosphorus. This enhanced resistance in the presence of phosphorus was inhibited by hypertonic sodium chloride, by ions of magnesium and beryllium, and by cysteine.

—E. J. L. Soulsby.

Koch, A. L. (1953). **Biochemical studies of virus reproduction. XI. Acid-soluble purine metabolism.** — *J. biol. Chem.* **203**, 227-237. **1909**

When *Bacterium coli* and coliphage T_6r+ are incubated for a short time in media containing radio-active adenine, the acid-soluble

components (mainly adenylic acid and adenine-diphosphate) have a higher specific activity than the nucleic acid purines. The acid-soluble components are converted either to nucleic acid in the growing cell or to the deoxypentose nucleic acid of the phage in infected cells.
—A. Seaman.

Smith, M. H. D. & Kun, E. (1954). **Morphological and biochemical studies on the chorio-allantois of the chick embryo following infection with certain viruses.**—*Brit. J. exp. Path.* **35,** 1-10. [Authors' summary modified.] **1910**

Metabolic studies were made of chorio-allantoic membranes infected with the viruses of: myxoma, fibroma, Rous sarcoma, swine influenza, Newcastle disease, vaccinia, and herpes simplex. Infection with all viruses tested brought about an increase in anaerobic hexose diphosphate dismutation. Heat-inactivated virus suspensions did not produce this effect. Marked inflammation produced by inoculation of a sterile suspension of " celite " (a mixture of silica oxide, aluminium oxide and small quantities of other oxides) was similarly unaccompanied by such a primary effect upon glycolysis. It is concluded that increased hexose diphosphate dismutation is in some way closely linked with virus multiplication.

Inkley, G. W. (1953). **Chemotherapeutic studies on the viruses of sheep abortion and mouse pneumonitis (NIGG) with special reference to an embryonated egg method.**—*Brit. J. Pharmacol.* **8,** 448-452. [Author's summary modified.] **1911**

The author described a method using embryonated eggs for the testing of antiviral agents, and discussed its advantages and limitations. The action of oxytetracycline (terramycin), aureomycin, chloramphenicol, and penicillin against the viruses of ovine virus abortion and mouse pneumonitis was examined by this method. In the case of mouse pneumonitis virus, the results of the egg test compared favourably with those obtained in mice.

Bingel, K. F. (1953). Ein Beitrag zur Methodik der Desinfektionsprüfung bei Viren. **[Methods of testing disinfection against viruses.]** — *Z. Hyg. InfektKr.* **137,** 126-129. **1912**

B. concluded that animal experiments are unavoidable and described a general method for testing the viricidal activity of a disinfectant.
—R. B. Holcombe.

Messow, C. (1953). Das Ganglion cervicale craniale des Hundes bei Lyssa und Staupe. **[The anterior cervical ganglion of the dog in rabies and distemper.]** — *Dtsch. tierärztl. Wschr.* **60,** 515-517. **1913**

Examination of the anterior cervical ganglia of 291 dogs showed that inflammatory and degenerative changes are not diagnostic for rabies, as similar changes may occur in distemper, " hard pad " disease, and even in normal dogs.—W. G. Siller.

Holz, K. (1953). Über Gehirnretikuloendotheliosen der Tiere und des Menschen. **[Reticulo-endotheliosis of the brain in animals and man.]**—*Zbl. VetMed.* **1,** 115-135. [English, French and Spanish summaries.] **1914**

The neuro-histological picture of some of the more chronic virus infections in animals is comparable to reticulo-endotheliosis of man; thus granular ependymitis is frequently seen in equine infectious anaemia. Similar lesions occur in Newcastle disease, dog distemper, and swine fever. These localized endothelial infiltrations require considerable time for their development (8 weeks in E.I.A.).
—W. G. Siller.

Gallo, P. & Valeri, H. (1954). Vergleich der Adsorptionsfähigkeit von $CaCl_2$ und $Al(OH)_3$ im Bezug auf das Virus von: " Encephalomyelitis equina ", " Rabies paralytica " und " Stomatitis vesiculosa infectiosa ". **[Comparison of the adsorption of the viruses of equine encephalomyelitis, paralytic rabies and vesicular stomatitis on calcium chloride and aluminium hydroxide.]**—*Dtsch. tierärztl. Wschr.* **61,** 9-11. [English summary.] **1915**

The viruses of equine encephalomyelitis, paralytic rabies and vesicular stomatitis were adsorbed to $CaCl_2$ and $Al(OH)_3$. The efficiency of these substances was tested by inoculating various dilutions of the supernatant fluid into mice. $CaCl_2$ and $Al(OH)_3$ were equally efficient in adsorbing encephalomyelitis virus. $CaCl_2$ was the more efficient in adsorbing the viruses of rabies and stomatitis. In the case of the latter the supernatant fluid was sterile.
—W. G. Siller.

See also absts. **2017** (rabies in Alaska); **2092** (report, O.I.E.); **2147** (report, microbiology).

IMMUNITY

HOET, J. J., BLOMFIELD, A. M. & COOMBS, R. R. A. (1954). **The selective absorption of haemolytic complements by antibodies from different species of animals.**—*Brit. J. exp. Path.* **35**, 32-34. [Authors' summary modified.] **1916**

Anti-mallein sera from 11 species of animal were examined for their titre of complement-fixing antibody using 2 minimal complement doses of g. pig, rabbit and human haemolytic complements. A comparison of the results showed that, with the method used for fixation, the complement of the rabbit was the most sensitive in demonstrating the antibody in nearly all the sera.

GOOD, R. A. & THOMAS, L. (1953). **Studies on the generalized Shwartzman reaction. IV. Prevention of the local and generalized Shwartzman reactions with heparin.**—*J. exp. Med.* **97**, 871-888. **1917**

Aqueous heparin injected i/v, and ' depot ' heparin injected s/c at the time of provocation, but not during the period of preparation, completely protected rabbits against the local and generalized Shwartzman reactions.

—W. R. BETT.

STAVITSKY, A. B. (1953). **The influence of adrenal cortical extract on antibody formation, including the nonspecific anamnestic reaction in the rabbit.**—*J. infect. Dis.* **93**, 130-139. **1918**

Under the conditions of the experiment no enhancement of antibody formation was found, and the results reported earlier by Chase *et al* [*V.B.* **17**, 607] were not confirmed. It was concluded that increased antibody production and the production of an anamnestic response in rabbits by the injection of adrenal cortical extract do not occur regularly. S. discussed possible reasons for these differences.

—D. LUKE.

KASS, E. H., LUNDGREN, M. M. & FINLAND, M. (1954). **The effect of adrenal steroids, corticotropin (ACTH), and growth hormone on resistance to experimental infections.** — *J. exp. Med.* **99**, 89-104. **1919**

Cortisone acetate and hydrocortisone depressed within 24 hours after injection, but A.C.T.H. did not significantly alter, the resistance of mice to pneumococcal and influenza viral infections. Corticosterone depressed the resistance to pneumococcal infections only, whilst growth hormone neither increased resistance to infection nor altered the depressing effect of cortisone on resistance. None of these hormones altered the titres of influenza virus attained in the murine lungs during the first 2 days of infection, but cortisone and hydrocortisone delayed the rate at which the viral titres declined during the next 6 days.

—A. ACKROYD.

MACLEOD, C. M. (1953). **Relation of the incubation period and the secondary immune response to lasting immunity to infectious diseases.**—*J. Immunol.* **70**, 421-425. **1920**

The author observed that respiratory tract infections with long incubation periods are followed by lasting immunity whereas those with short incubation periods afford transient immunity. He postulated that this difference could be attributed to the secondary immune response occurring during the incubation period in the former group, but there would not be time for this to happen in respiratory diseases with short incubation periods. He discussed how this and other factors might influence the duration of immunity in infectious diseases other than those of the respiratory tract.

—G. FULTON ROBERTS.

WISSLER, R. W., ROBSON, M. J., FITCH, F., NELSON, W. & JACOBSON, L. O. (1953). **The effect of spleen shielding and subsequent splenectomy upon antibody formation in rats receiving total-body X-irradiation.**—*J. Immunol.* **70**, 379-385. **1921**

X-irradiation of the body depresses the antibody response of the rat to single i/v or i/p injection of an antigen whether the antigen is given before or 48 hours after X-rays. Lead-shielding of the spleen abolishes the effect of X-irradiation on the antibody response to i/p antigen but not to i/v antigen; the protective effect of lead-shielding is also apparent when the shielded spleen is removed 24 or 72 hours after irradiation. Simple splenectomy depresses antibody formation in the rat to antigen administered i/v but not to antigen administered i/p.

—G. FULTON ROBERTS.

RADOJČEVIĆ, M. & MILIN, L. (1949). Funkcionalno ispitivanje jetre protrombinskom probom kod konja za dobivanje lekovitih seruma. **[Prothrombin test for liver function in serum horses.]**—*Bilten. Vet.* **2**, No. 10. pp. 11-16. **1922**

Two series of prothrombin tests were carried out at intervals of 5 months in 28 horses used for the production of swine erysipelas

serum. The authors discussed the suitability of this test for the selection of serum animals and the testing of liver function.—E.G.

MACKAY, M. E., MILES, A. A., SCHACHTER, M. & WILHELM, D. L. (1953). **Susceptibility of the guinea pig to pharmacological factors from its own serum.**—*Nature, Lond.* **172,** 714-716. **1923**

Permeability and antihistaminic factors were demonstrable in g. pigs following i/d injection of fresh homologous serum diluted with saline. Another permeability factor, distinct from the dilution type, was demonstrable in g. pigs injected with aged homologous serum.

Serum fractionation produced a hypotensive factor.—E. J. L. SOULSBY.

BRUNER, D. W. & DOLL, E. R. (1953). **Blood groups in horses (Indian system): their value in transfusions and neonatal isoerythrolysis.** —*Cornell Vet.* **43,** 217-222. **1924**

Indian workers [*V.B.* **20,** 3031] had classed horse blood groups as A, B, AB and O. The authors studied the serum of 37 mares known to have borne foals with haemolytic disease of the new-born. Eight of these were sensitized to Group A but the others were sensitized, not to Group B but to other groups not yet clearly defined. Testing of mares and stallions concerned with the bearing of affected foals confirmed the view that several blood groups systems are involved.—G. FULTON ROBERTS.

BIRD, G. W. G. (1953). **Observations on haemagglutinin " linkage " in relation to iso-agglutinins and auto-agglutinins.**—*Brit. J. exp. Path.* **34,** 131-137. **1925**

B. absorbed divided samples of 32 Group O sera from Indians with A and B substances. In 11 the absorption was specific but in 13 sera the specific absorption of one antibody was accompanied by reduction in titre (usually by " two tubes " only) of the other; and in the 5 remaining sera this effect was found with each of the antibodies. In one serum there was no reduction in titre of the heterologous agglutinin after absorption, but a prozone effect disappeared. Several of the sera contained auto-agglutinins and were examined in more detail and the results are considered in the light of a possible " linkage " of agglutinins.

—G. FULTON ROBERTS.

BOURSNELL, J. C., COOMBS, R. R. A. & RIZK, V. (1953). **Studies with marked antisera. Quantitative studies with antisera marked with iodine ^{131}isotope and their corresponding red-cell antigens.**—*Biochem. J.* **55,** 745-758. [Authors' summary copied *verbatim.*] **1926**

Experiments have been carried out with antisera marked with ^{131}I in an attempt to study quantitatively the interaction of serum antibodies and red cell antigens.

Studies were made on inagglutinable systems. These were ' inagglutinable ' bovine cells with ^{131}I-marked rabbit anti-bovine red cell and ^{131}I-marked human infectious mononucleosis sera, and also human cells with ^{131}I-marked human Rh incomplete anti-D sera. The complication due to the non-specific adsorption which interfered with quantitative determinations was avoided by pretreatment of the cells with unmarked serologically compatible serum. The ratio of iodine uptake by the γ-globulin fraction of serum to that of the whole serum was found to pass through a maximum (0·92) with an iodine content of about one atom per protein molecule (assumed average mol. wt. of 10^5).

The amount of Paul-Bunnell antibody (in terms of ^{131}I-marked serum protein) in an infectious mononucleosis serum was found to be about 40 μg./ml. serum (7% protein). In the same terms, the amount of D-antibody in an incomplete Rh antiserum was estimated at 54 μg. The number of Paul-Bunnell sites on a single bovine red cell was found to be considerably greater than the number of D sites on a human Rh-positive cell (CDe/CDe). The implication of these results is discussed in the light of some observed serological phenomena.

BASERGA, R. & BERGAMINI, F. (1953). **Quantitative studies on anaphylaxis, deallergization, and desensitization.**—*J. Immunol.* **71,** 397-401. [Authors' summary modified.] **1927**

The authors studied quantitative changes in the antibody content of the serum of actively sensitized and desensitized g. pigs. Detectable amounts of antibodies were produced by means of the " adjuvant " technique. The results were not in favour of the quantitative theory of desensitization.

KORNGOLD, L. & PRESSMAN, D. (1953). **The *in vitro* purification of tissue localizing antibodies.**—*J. Immunol.* **71,** 1-5. **1928**

Antibodies *in vitro* were purified by adsorbing radio-iodinated anti-liver, anti-kidney, anti-lung, and anti-spleen sera with blood-vessel or cellular fractions of an organ and eluting the adsorbed radio-activity by heat at 60°C.

The eluates from blood-vessel fractions possessed different localizing properties from those obtained from cellular fractions of the same organs. Eluates could also be prepared which localized preferentially in liver, kidney, lung, or spleen, by purifying the homologous antitissue serum with a homologous tissue fraction.

—W. R. Bett.

See also absts. **1751** (haemagglutination-haemolysis reaction for diagnosis of TB.); **1758** (P.P.D.); **1759** (active components of tuberculin in haemagglutination); **1767** (effect of cortisone on B.C.G. vaccination); **1768-1769** (B.C.G.); **1777** (complement-fixation test in Johne's disease); **1783** (agglutination in melioidosis); **1784-1786** (swine erysipelas); **1788** (agglutination of *P. septica* by anti-abortus sera); **1798-1801** (brucellosis); **1802** (standardization of veterinary biological products); **1809** (equine periodic ophthalmia); **1847-1857** (F. & M. disease); **1858-1861** (rabies); **1862** (vaccinia); **1871** (complement-fixation test in E.I.A.); **1875** (African horse-sickness); **1877** (rinderpest); **1890** (distemper); **1896** (diagnosis of Newcastle disease by serological examination of organ extracts); **1900-1902** (Newcastle disease and fowl plague); **2018** (distemper); **2021** (depigmentation of hair in horses immunized against strangles).

PARASITES IN RELATION TO DISEASE [ARTHROPODS]

Kemper, H. E. & Peterson, H. O. (1953). **Cattle lice and how to eradicate them.**—*Fmrs' Bull. U.S. Dep. Agric.* No. 909. pp. 20. 1929

This is a completely revised edition of the booklet, which was first issued in 1918. The economic importance and life histories of the five species of cattle lice are described. The merits of " dusts," sprays, and dips, are discussed in detail, and the appropriate equipment is illustrated. Concentrations of 0·5% D.D.T., toxaphene, or chlordane, or 0·06% γ-isomer of benzene hexachloride, are recommended for all species, except the tail louse, *H. quadripertusus,* for which a 1·5% D.D.T. spray is advised. Treatment should be repeated after an interval of 15–16 days to ensure complete control. The value of derris preparations for control of lice is also emphasized.

—D. W. Jolly.

Shanahan, G. J. & Wright, P. (1953). **Swim dipping experiments with arsenic and BHC against the sheep body louse.**—*Agric. Gaz., N.S.W.* **64,** 578 & 611-614. 1930

An account of trials in which sheep body lice, *Damalinia ovis,* were eliminated from infested flocks by dipping in 0·00625% γ-isomer of benzene hexachloride, or 0·140–0·175% arsenic (As_2O_3). This work formed part of a general investigation into the efficiency of the different methods of controlling sheep body lice.

—D. W. Jolly.

du Toit, R. & Fiedler, O. G. H. (1953). **Report on the value of isodrin and endrin as potential protecting agents against blowfly strike in sheep.**—*Onderstepoort J. vet. Res.* **26,** 221-224. [Authors' summary modified.] 1931

Two new synthetic chlorinated hydrocarbon insecticides, isodrin and endrin were tested for their larvicidal effect against *Lucilia cuprina* and for the duration of protection afforded against artificial strike. In both these properties they compared favourably with similar products tested previously. However, a deleterious bleaching effect upon the wool, probably due to saponification of the wool grease accompanied by structural changes in the staple would preclude their use for obvious economic reasons.

Sergent, E. (1952). La thimni, myiase oculo-nasale de l'homme causée par l'oestre du mouton. [*Oestrus ovis* **larvae in man.**]—*Arch. Inst. Pasteur Algér.* **30,** 319-361. 1932

Replies to a questionnaire sent to ophthalmologists in Algeria and in other countries indicated that myiasis in human beings caused by the larvae of *O. ovis* has almost a world-wide distribution, with the exception of Australia where although the fly is common, cases in man do not occur. Up to 30 larvae may be deposited in the eye, but development beyond the first stage does not take place.

—Jas. G. O'Sullivan.

Kraneveld, F. C. & Djaenoedin, R. (1952). Een onvoldoende onderzochte oor-aandoening bij paarden op Timor (secundaire myiasis?). [**Myiasis involving the external ear in horses in Indonesia.**]—*Hemera zoa.* **59,** 54-60. [In Dutch. English, French and German summaries.] 1933

A description of 10 cases in horses. There was chronic suppuration of the external ear. Larvae of *Sarcophaga* together with larvae identified as belonging to the family Canaceidae, were present in all cases.

—C. A. van Dorssen.

Corey, R. A., Dorman, S. C., Hall, W. E., Glover, L. C. & Whetstone, R. R. (1953). **Diethyl 2-chlorovinyl phosphate and dimethyl 1-carbomethoxy-1-propen-2-yl phosphate—two new systemic phosphorus pesticides.**—*Science.* **118,** 28-29. 1934

The authors described two new organic phosphorus compounds with good insecticidal properties. Tests indicated that these compounds are over 100 times more toxic to houseflies than octamethylpyrophosphoramide, although they have approx. the same toxicity for mammals.—D. W. Jolly.

GRIFFITHS, R. B. & GORDON, R. M. (1952). **An apparatus which enables the process of feeding by mosquitoes to be observed in the tissues of a live rodent; together with an account of the ejection of saliva and its significance in malaria.** — *Ann. trop. Med. Parasit.* **46,** 311-319. **1935**

The authors described an apparatus suitable for the study of the mechanism of a mosquito bite in an anaesthetized mouse and gave photographs of mouthparts entering the skin. The fascicle probes the dermis, exuding saliva continuously until a capillary is punctured. Thus an infective mosquito may distribute sporozoites not only into the capillary but throughout the area of probing.

—BERYL A. KAY.

ANON. (1953). **Techniques and materials for the disinsectization of aircraft.**—*Bull. World Hlth Org.* **8,** 527-533. [French summary.] [Author's summary modified.] **1936**

A discussion on the improvement of hitherto approved techniques for the disinsectization of aircraft arriving at international airports in the U.S.A., with reference to the effectiveness of benzene hexachloride vapour.

O'ROURKE, F. J. & MURNAGHAN, M. F. (1954). **Tick paralysis in the dog.** [Correspondence.] —*Nature, Lond.* **173,** 131-132. **1937**

Tick paralysis was repeatedly induced under laboratory conditions in four dogs through the attachment of female *Dermacentor andersoni.* There was no evidence of a toxin circulating in the blood of affected dogs, and no sign of any immunity being developed to the paralysis.—D. W. JOLLY.

ENIGK, K. & GRITTNER, I. (1953). Die Exkretion der Zecken. **[The excretions of ticks.]**—*Z. Tropenmed u Parasit.* **4,** 77-94. **1938**

The authors studied " micturition " and " defaecation " habits and physiology during developmental stages and adult life of the Ixodidae, *Haemaphysalis leachi, Hyalomma rufipes, H. savignyi, H. detritum, Rhipicephalus sanguineus, R. bursa, R. evertsi, Boophilus calcaratus, B. decoloratus, Dermacentor marginatus, Amblyomma variegatum, A. hebraeum* and *Ixodes ricinus,* and the Argasidae, *Ornithordoros coriaceus, O. lahorensis, O. rostratus, O. moubata* and *Argas reflexus.*

In ixodid ticks there was a certain rhythm. Voiding of " urine " was first observed after the first blood meal and last about halfway through the pupal stage and again a few days after moulting, whereas "defaecation" occurred only during the blood-sucking act and a few days after moulting, following " micturition ". There were slight variations according to host, size and stage of development.

In argasid ticks " defaecation " and " micturition " occurred at irregular intervals during blood meals. During each developmental stage, however, excretions were highest about 3 weeks after a blood meal.

The authors discussed the relative importance of these observations in connexion with certain infectious diseases of man and animals, the agents of which are contained in excretions of ticks.—E.G.

CLIFFORD, H. C. (1954). **Spraying of cattle as a method of control of cattle ticks and its field application in Ankole District of Uganda.** —*Trop. Agriculture, Trin.* **31,** 19 - 26. [Author's summary modified.] **1939**

C. described the reasons, method of development, value and significance of a scheme of spraying for tick control, supported largely by voluntary subscription by African stock owners.

TRAVASSOS SANTOS DIAS, J. A.(1951). Acerca da existência em Moçambique de uma nova subespécie do género *Dermacentor* Koch, 1844. ***D. (Puncticentor) circumguttatus cunha-silvai*** n. ssp. **[*Dermacentor circumguttatus* from elephants in Mozambique.]**—*Ann. Inst. Med. trop., Lisboa.* **8,** 531-547. **1940**

The author described a variant of *Dermacentor circumguttatus* from elephants in Mozambique. He found that it differed from specimens received from the Onderstepoort Laboratory, South Africa, and proposed to name it *D. circumguttatus cunha-silvai.*—F. A. ESTEVES.

CASSAMAGNAGHI, A., JR. (1951). Los ixodidos del Uruguay. Una contribucion para su mejor conocimiento. I. Existencia de una probable subespecie de *Ixodes auritulus* Neumann, 1899. II. Nuevos huéspedes para *Ixodes loricatus* Neumann, 1899. **[Some Ixodidae of Uruguay.]**—*Bol. mens. Direcc. Ganad., Urug.* **32,** 90-99. **1941**

C. listed the ticks known to occur in Uruguay and gave a detailed description of some Ixodidae taken from thrushes, *Planesticus rufiventris* and *P. amaurochalinus* in which protozoan parasites were being studied. In all, 8 adult and 11 nymphal forms were seen and it was considered that these differed from the typical *Ixodes auritulus* sufficiently to be classified as a new subspecies. *I. loricatus* was found on two new hosts, namely the opossums, *Didelphys azarae* and *Minuana dimidiata* [*Monodelphis dimidiatus*].—I. W. JENNINGS.

Fiedler, O. G. H. & du Toit, R. (1953). **An evaluation of the acaricidal properties of aldrin and dieldrin for the control of sheep scab.**—*Onderstepoort J. vet. Res.* **26**, 225-230. 1942

In small-scale dipping trials with Merino sheep that had been heavily infested with *Psoroptes communis ovis* for periods from 3 months to 4 years, one dipping with 0·03% dieldrin (the endo-exo-isomer of hexachloro-epoxy-octohydro-dimethanonaphthalene) gave complete cure comparable to that obtained with 0·02% γ-isomer of benzene hexachloride, whereas a single dipping with aldrin (the endo-exo-isomer of hexachloro-hexahydro-dimethanonaphthalene) at a conc. of 0·05% did not eradicate the mites.

See also absts. **1782** (*Hydrotea irritans*); **1844** (arthropod transmission of toxoplasmosis); **2140** (report, Great Britain).

PARASITES IN RELATION TO DISEASE [HELMINTHS]

Yosufzai, H. K. (1953). **Shell gland and egg-shell formation in *Fasciola hepatica* L.**—*Parasitology*. **43**, 88-93. 1943

Oocytes, vitelline granules and vitelline cells are churned up in an elliptical chamber in the shell gland of *F. hepatica*. The shell gland produces a hyaline secretion which forms the egg-shell. The shell is temporarily reinforced from the inside by vitelline granules as the egg passes down the uterus.—S. F. M. Davies.

Jordan, F. T. W. (1953). **Intestinal infestation of turkey poults with *Plagiorchis* (*Multiglandularis*) *megalorchis* Rees, 1952 and an experimental study of its life-cycle.**—*J. Helminth.* **27**, 75-80. [Abst. from author's summary.] 1944

J. described heavy infestation with *Plagiorchis megalorchis* in four turkey poults, 2 weeks old, presumed to have died from the infestation. He studied the life-cycle of the parasite using turkey poults as the definitive host.

Vercruysse, R. (1950). Un nouveau parasite de l'éléphant d'Afrique, *Loxodonta africana*: *Cotylophoron cotylophorum* (Fischoeder, 1901) Stiles et Goldberger 1910. **[A new parasite of the African elephant (*Loxodonta africana*): *Cotylophoron cotylophorum*.]**—*Ann. Soc. zool. Belge*. **81**, 21-24. 1945

The trematode *C. cotylophorum* was found attached to the stomach wall in an African elephant. The author compared specimens with those found in ruminants.—R.M.

Gibson, T. E. (1953). **The effect of repeated anthelmintic treatment with phenothiazine on the faecal egg counts of housed horses, with some observations on the life cycle of *Trichonema* spp. in the horse.**—*J. Helminth.* **27**, 29-40. [Abst. from author's summary.] 1946

The faecal egg count fell to zero in six aged horses after treatment with 30 g. of phenothiazine but returned to a high level after 5–6 weeks. During treatment many worms were excreted with the faeces. Treatment was repeated several times and was followed by similar increases in the egg count on each occasion, but the time before a high level was reached lengthened with each successive course. After about three years of treatment the egg counts remained permanently at a low level.

G. suggested that this sequence of events can be explained by assuming that the development of large numbers of larvae is inhibited in the histotropic phase and that they only leave the mucous membrane of the caecal wall after the adult worms have been removed by the anthelmintic. He stressed the necessity for repeated treatment of horses, even when not exposed to reinfestation, and the importance of assessing worm burden about ten weeks after treatment.

Poynter, D. (1954). **Seasonal fluctuation in the number of strongyle eggs passed by horses.**—*Vet. Rec.* **66**, 74-78. [Author's summary modified.] 1947

P. showed that a seasonal fluctuation exists in the number of *Trichonema* spp., *S. edentatus* and *S. vulgaris* eggs passed by horses. He suggested that the rise is referable initially to an increased rate of egg production by existing parasites, this rise being related to an increase in the parasites reaching maturity in the alimentary canal. He discussed the effect of phenothiazine upon the rise in the number of eggs passed and presented evidence of the selective action of this drug on the strongyle population.

Alicata, J. E. (1953). **Observations on the lethal action of polyborate on swine kidney worm (*Stephanurus dentatus*) larvae in soil.**—*Amer. J. vet. Res.* **14**, 563-570. 1948

An expanded account of the author's previously published work [*V.B.* **23**, 3423]. Under field and experimental conditions polyborate controlled the development of *S. dentatus* larvae in soil. The polyborate was injurious to vegetation.—Jas. G. O'Sullivan.

Stewart, D. F. (1953). **Resistance to nematode infestation in sheep.**—*Proc. XVth Int. vet. Congr. Stockholm*. 1953. **1**, Pt. 1.

417-421. [In English. French and German summaries.] **1949**

S. described the resistance of lambs and adult sheep to *Trichostrongylus colubriformis* and to *Haemonchus contortus* infestation. Sheep were examined for acquired immunity to infestation by the c.f. test using antigen prepared from infective larvae. He described the phenomenon of " self-cure " (the sudden loss of parasitic nematodes by grazing sheep).—R.M.

MICHEL, J. F. (1953). **Phenomenon of protection in infections of** *Trichostrongylus retortaeformis*. [Correspondence.]—*Nature, Lond.* **172,** 312. **1950**

In rabbits dosed *per os* with infective larvae of *T. retortaeformis* three times a week, those given after the eighth week failed to become established. [See also *V.B.* **22,** 3754 & 3755.] —D. POYNTER.

ANON. (1951). Épidémiologie de la pneumonie vermineuse à *Cystocaulus ocreatus*. [**Lungworm infestation of sheep with** *Cystocaulus* [*Synthetocaulus* (*Protostrongylus*)] *ocreatus*] —*Rapp. Inst. Pasteur Maroc.* 1950-51. pp. 31-32. **1951**

A brief note on the finding of *Cystocaulus* [*Synthetocaulus* (*Protostrongylus*)] *ocreatus* in one of two kids four weeks after infestation. The parasite is found essentially on poor pastures.—M. L. CLARKE.

JOYEUX, C. & BAER, J. G. (1951). Recherches helminthologiques marocaines. Epidémiologie de la pneumonie vermineuse a *Cystocaulus ocreatus* (Railliet et Henry, 1907). [**Epidemiology of lungworm disease of sheep and goats** (*Cystocaulus ocreatus*).]—*Arch. Inst. Pasteur, Maroc.* **4,** 304-313. **1952**

The distribution depended on the state of the pastures, *Cystocaulus* [*Synthetocaulus* (*Protostrongylus*)] being the predominant parasite where nutrition was insufficient. The main intermediate host was the snail, *Euparypha pisana*.—JAS. G. O'SULLIVAN.

GROOTENHUIS, G. (1953). Wormziekten-bestrijding bij het paard. [**Control of helminth parasites in the horse.**]—*Tijdschr. Diergeneesk.* **78,** 630-636. [English, French and German summaries.] **1953**

The damage by helminth infestation to horse-breeding in the Netherlands amounts to millions of florins. G. advised the preventive treatment with an anthelmintic of all horses in spring before they are put on grass, the cleansing of the boxes for brood mares with boiling water, and the anthelmintic treatment of weaned foals. —C. A. VAN DORSSEN.

WHITTEN, L. K. & MACFARLANE, I. M. (1953). **The effect of monthly anthelmintic treatment on the growth of young sheep rotationally grazed on hill pastures.**—*N.Z. Vet. J.* **1,** 150-153. [Authors' summary modified.] **1954**

Three groups of young sheep were drenched at monthly intervals from weaning in January until July, with phenothiazine and with a mixture of copper sulphate and nicotine sulphate. Body weight differences were greatest in May, when those of the phenothiazine group were 11·6 lb. heavier, and those of the copper sulphate and nicotine sulphate groups were 5·8 lb. heavier, than those of the control group.

The sheep were grazed rotationally on hill pastures, each paddock being grazed for one week and rested for 3–4 weeks. The grazing system used did not prevent the development of moderately heavy infestation over the critical autumn months.

NEVENIĆ, V. (1952). [**Development of larval** *Ascaris equorum*.] — *Acta vet., Belgrade.* **2,** No. 2. pp. 205-208. [In Serbian. French summary.] **1955**

An account of the conditions in which the larvae of *A. equorum* are able to complete their life history.—I. MARTINI.

VAIDYANATHAN, S. N. (1952). *Spirocerca lupi* **infection in dogs. A few cases treated with hetrazan (Lederle).**—*Indian vet. J.* **29,** 244-247. **1956**

A general account of *S. lupi* infestation in dogs, with a clinical account of a case treated with hetrazan; improvement in general condition followed and excretion of eggs of *S. lupi* ceased.—B. K. KATHURIA.

BÉCHADE, R. & BÉCHADE, A.-M. (1953). Tétramérose du pigeon dans le département de l'Indre. [*Tetrameres* **infestation in pigeons in France.**]—*Rec. Méd. vét.* **129,** 645-650. **1957**

An account of observations made in 1950 on an outbreak of *Tetrameres* (*T. fissispina*?) infestation in a flock of pigeons. The parasites were found in quantity in the proventricular mucosa. The authors described the technique used for collecting the worms, the morphology of the male and female and the epidemiology of the infestation.—J.D.

MANN, P. H. & FRATTA, I. (1953). **Transplantation of adult heartworms,** *Dirofilaria immitis*, **into dogs and cats.**—*J. Parasit.* **39,** 139-144. **1958**

Adult *D. immitis* were successfully transplanted into the jugular vein in 8 dogs in which freedom from filariae had been determined by

the serum concentration method described by Live & Stubbs [*V.B.* **9**, p. 325]. Adult worms were also transferred successfully to 16 cats, using material recovered from dogs. Microfilariae were present in the blood of the cats 4–52 days after inoculation.

—Jas. G. O'Sullivan.

Innes, J. R. M. (1953). **The possible occurrence of cerebrospinal nematodiasis in goats in India.**—*Brit. vet. J.* **109**, 451-455. **1959**

Histological examination of the brain and part of the spinal cord of a paralysed goat from Orissa, N.E. India, revealed lesions characteristic of paralysis associated with damage caused by larvae of *Setaria* worms [*V.B.* **22**, 2881], but no worms were demonstrable.

—D. W. Jolly.

Perumal Pillai, C. & Perera, S. J. E. (1953). **Epizootic cerebro-spinal nematodiasis in goats. Control of the disease by 1-diethylcarbamyl-4-methylpiperazine citrate : preliminary therapeutic trials.**—*Ceylon vet. J.* **1**, 22-26. **1960**

Migrant larvae of the genus *Setaria* were incriminated as the cause of a posterior paralysis in nine goats. Recovery was observed in all cases following the oral administration of caricide at a dosage rate of 40 mg. per kg. body wt. for 2–3 consecutive days.—D. W. Jolly.

See also absts. **2017** (*Echinococcus* and *Diphyllobothrium* in man from animals in Alaska); **2019** (diseases in rabbits and hares); **2134** (study of helminths); **2140** (report, Great Britain).

SPONTANEOUS AND TRANSMISSIBLE NEOPLASMS AND LEUCAEMIAS [INCLUDING FOWL PARALYSIS]

Cohrs, P. (1953). Infektiöse Adenopapillome der Riechschleimhaut beim Schaf. **[Infectious adenopapilloma of the olfactory mucous membrane in sheep.]**—*Berl. Münch. tierärztl. Wschr.* **66**, 225-228. [English summary.] **1961**

C. described the pathological features of adenopapilliform lesions of the olfactory mucosa of sheep, and the clinical symptoms they produced. Cases occurred endemically in 3 flocks of sheep in Germany. The lesions appeared to start off with lymphocytic infiltrations of the mucosa, followed by adenomatous epithelial proliferation and later production of papilliform projections. The lesions were closely similar to those described by Nieberle [*V.B.* **11**, p. 180] as endemic cancer of the ethmoid bone of sheep. The lesions were reproduced experimentally in five sheep, and a possible virus origin for the lesions was indicated.—E. Cotchin.

Braemer, C. (1951). Die Mammatumoren bei der Hündin. **[Mammary tumours in bitches.]** —*Inaug. Diss., Humboldt Univ., Berlin.* pp. 83. **1962**

B. gave an account of mammary tumours of the bitch, based on a review of the literature, and on a study of her own 169 cases. All forms of mammary tumour were dealt with, but particular attention was given to the common " mixed " tumours, which she looked upon as being primarily adenomas derived from normal mature glandular tissue, with a secondary development of what was taken to be a young connective tissue with embryonic potencies. From this latter tissue, myxomatous, chondroid and bony tissue may develop, or it may become sarcomatous. B. traced the various types of mixed tumour to the variable development of the epithelial and mesenchymal components; she made only passing reference to the possible role of the myoepithelium in the growth of mixed tumours.

—E. Cotchin.

Weipers, W. L. & Jarrett, W. F. H. (1954). **Haemangioma of the scrotum of dogs.**—*Vet. Rec.* **66**, 106-107. **1963**

The authors described the clinical features —" bleeding scrotum "—pathology, and surgical treatment of haemangioma of the scrotum in dogs. There are 4 photomicrographs of sections of lesions.—R.M.

Mather, G. & Low, D. (1953). **Chronic pulmonary osteoarthropathy in the dog.**—*J. Amer. vet. med. Ass.* **122**, 167-171. **1964**

A case record of fibrosarcoma in a dog, involving the lungs and associated with a fairly symmetrical enlargement of joints and bones of the limbs.—Barbara G. Clarke.

Hirnle, Z. (1953). Ziarnica złośliwa u psa. **[Hodgkin's disease in a dog.]** — *Méd. vét. Varsovie.* **9**, 209-214. [In Polish. English and Russian summaries.] **1965**

A clinical report on a case of Hodgkin's disease in a dog.—J. R. Mitchell.

Pellissier, A. & Bories, G. (1953). Une tumeur filtrable de la poule d'un type particulier histiocyto-xantho-sarcome. **[A transmissible tumour of the fowl, a histiocyto-xantho-sarcoma.]**—*Ann. Inst. Pasteur.* **85**, 217-221. **1966**

A tumour, occurring spontaneously in the right breast of a year-old cockerel, with visceral

metastases, was composed of fusiform histiocytes, and of two kinds of cell derived therefrom—large phagocytic cells, and cells with vacuolated or yellow-brown pigmented cytoplasm. The tumour was transmitted by grafting and then apparently by filtrate to other fowls.
—E. Cotchin.

Darcel, C. le Q. & Franks, L. M. (1953). **Angiomatoid lesions of the skin in young chicks.**—*J. Path. Bact.* **66**, 499-592. [Authors' summary modified.] **1967**

The authors described a familial angiomatoid condition occurring in the skin of the back of the neck in young chicks. Histologically it is a form of capillary haemangio-endothelioma.

Tamaschke, C. (1951/52). Beiträge zur vergleichenden Onkologie der Haussäugetiere. **[Comparative study of neoplasms in domestic mammals.]**—*Wiss. Z. Humboldt-Univ.* **1**, No. 2. pp. 37-77. **1968**

This excellent article is a lengthy review of the literature on neoplasms in animals, particularly in domestic animals. A considerable amount of information is given, with some useful tabulations, and there is a classified bibliography of nearly 400 references. The original article is strongly recommended to all interested in neoplasia in animals.—E. Cotchin.

Petgen, A. (1953). Fluoreszenzmikroskopische Untersuchungen des weissen Blutbildes bei gesunden und leukosekranken Rindern. **[Examination of the blood leucocyte picture in healthy cattle and in leucosis by fluorescence microscopy.]**—*Mh. Tierheilk.* **5**, 356-360. **1969**

This is a preliminary note. Examination of the blood leucocyte picture in healthy cattle and in cattle with leucosis, using fluorescence microscopy with acridine orange 1 : 100,000, revealed higher leucocyte counts than the method described by Türk. In cattle with leucosis there is an increase in lymphocytes which are seen in small accumulations together with monocytes. The nucleus of the lymphocytes is often excentrically placed, stains within 10–12 sec. (quicker than in normal lymphocytes) and nucleoli are sometimes discernible after 5–10 min.
—H. Behrens.

Żebrowski, L. (1952). Białaczki doświadczalne zwierząt. **[Experimental leucaemia in animals.]** — *Méd. vét., Varsovie.* **8**, 101-104. **1970**

A general discussion on leucaemia in animals.—J. R. Mitchell.

Sandstedt, H. & Sjöberg, K. (1952). Kort meddelande beträffande förebyggande åtgärder med kobolt mot leukos hos höns. **[The use of cobalt for the prevention of fowl paralysis.]** — *Nord. VetMed.* **4**, 283-289. [In Swedish. English and German summaries. Abst. from English summary.] **1971**

In flocks in which the Co level in the liver was low, and where the average incidence of fowl paralysis was 7·7%, the latter was reduced to 2·7% a year later, following the addition to the ration of a daily supplement of 0·25 mg. Co per fowl. Where the copper level in the liver was also low the Co supplement was ineffective.—K. J. Sinclair.

See also absts. **1903** (differential diagnosis of Newcastle disease and fowl paralysis); **2019** (diseases in wild rabbits and hares); **2142** (report, Canada).

NUTRITIONAL AND METABOLIC DISORDERS

Trautmann, A. & Hill, A. (1953). Beitrag zur Zelluloseverdauung im Blinddarm und grossen Colon der Einhufer. **[Digestion of cellulose in the caecum and the great colon in Equidae.]**—*Schweiz. Arch. Tierheilk.* **95**, 286-293. [English, French and Italian summaries.] **1972**

Material was introduced through a cannula into the colon and caecum of a pony and a donkey with fistulas. Both raw (cotton, flax and jute) and processed material was used. Pure cellulose was almost wholly digested but encrusting material (lignin and pectin) as represented in raw cotton and flax offered resistance and digestion took place along the fibres of these materials. Grinding of the materials gave greater surface for digestion.—R. Marshall.

Wehner, H. (1952). Studien über die Verdauungsphysiologie des Schweines (Stoffwechselbilanzversuche). **[Physiology of digestion in pigs.]**—*Inaug. Diss., Munich.* pp. 37 + xxxix. **1973**

In balance experiments with four Landrace gilts 14–17 weeks old, 2 of which were nonthriving animals with inappetence, alimentary disturbance, dermatitis and crampiness, the other 2 being normal healthy individuals, utilization of food varied with body weight and administration of vitamin A increased food utilization and retention in both groups.
—J. A. Nicholson.

Wieringa, G. W. (1954). De betekenis van de pensflora voor de spijsvertering van her-

kauwers. **[Role of the microflora of the rumen in ruminant digestion.]**—*Tijdschr. Diergeneesk.* **79,** 99-105. [English, French and German summaries.] 1974

A discussion on the literature.

—C. A. VAN DORSSEN.

ANDERSSON, P. (1953). Aureomycinets inverkan på våmfloran hos mindre idisslare. **[Effect of aureomycin on ruminal microflora.]**—*Nord. VetMed.* **5,** 636-652. [In Swedish. English and German summaries.] 1975

Sheep and goats received total doses of 1–6 g. aureomycin given over 2–4 days, with controlled feeding. Rumen content samples were taken. In all cases there was impaired digestion, primarily of concentrates, but also of hay with higher dosage rates. High dosage rates, (*e.g.* 0·5 g. twice daily for 3 days and higher) resulted in complete anorexia, disappearance of fungi and infusoria from the rumen contents and negative digestion tests. Following dosage with normal rumen contents recovery was rapid. One sheep which received no normal rumen contents died after symptoms of severe wasting. Lower dosage rates (0·25 g. twice daily for 2 days, and lower) caused impaired digestion, but recovery after some days even without adminstration of normal rumen contents. Small doses over longer periods, (*e.g.* 0·05 g. daily for 21 days) impaired digestion, but gradual recovery occurred so that eventually ruminal function tests gave similar results to those of controls. In one case an abnormal increase in concentrate consumption occurred during the first week. In general ruminal organisms were extremely sensitive to aureomycin, and so implantation of new ruminal flora is necessary (0·5 l. rumen contents 2 or 3 times) when using this antibiotic therapeutically *per os*. Aureomycin is suitable for treating calves with infections of the alimentary tract.—R. B. HOLCOMBE.

GORDON, R. F., CHUBB, L. G. & STACEY, C. G. (1954). **Vitamin B_{12} and penicillin supplements in poultry nutrition.**—*Vet. Rec.* **66,** 71-74. [Authors' conclusion slightly modified.] 1976

A commercial penicillin supplement when added to an adequate ration effected no improvement in growth, production or hatchability of eggs, of fowls maintained under the conditions of management described.

A vitamin B_{12} supplement added to a ration low in animal protein and where the main source of plant protein was groundnut meal, did not maintain as good a growth as a ration containing fish meal as the principal source of protein at a level of either 10 or 5% respectively.

Production by birds in cages was significantly lower on an all-vegetable ration when compared with the standard ration containing animal protein, and a vitamin B_{12} supplement effected no improvement. The addition of penicillin and vitamin B_{12} to the standard ration did not improve production.

The hatchability of eggs of birds maintained on wire was improved by the addition of a vitamin B_{12} supplement to an all-vegetable ration, but not to the same extent as one containing 10 or 5% fish meal. Hatchability on rations containing both penicillin and vitamin B_{12} was higher than on the standard ration only.

CARPENTER, L. (1953). **Nutrition, its relation to disease in swine.**—*Iowa Vet.* **24,** No. 6. pp. 12-13 & 20-22. 1977

The nutritive requirements of young pigs and the relationship of nutrition to enteritis are still imperfectly understood. Antibiotics exercise a beneficial effect both directly by influencing the intestinal flora and also indirectly by sparing B vitamins and proteins, but they are not " cure alls ".—J. A. NICHOLSON.

MOEGLE, H. (1953). Beitrag zum Problem der Aufzucht von Hundewelpen ohne Muttermilch. **[Artificial rearing of puppies.]**—*Tierärztl. Umsch.* **8,** 209-213. 1978

M. reared 2 litters of puppies, one from birth and the other from the age of 2 weeks, on a substitute for bitches' milk composed of bovine serum, condensed milk, sugar, and water.—R.M.

CHANDA, R., MCNAUGHT, M. L. & OWEN, E. C. (1952). **The effect of thyroxine and thiouracil on the composition of milk. III. The concentration of the major constituents and of some of the water-soluble vitamins in cow's milk.**—*Biochem. J.* **51,** 543-552. 1979

S/c injection of 10 mg. of *dl*-thyroxine daily into groups of 3–6 cows increased their milk yield by 13·2%, also increasing milk fat and lactose, and decreasing the chloride content. Administration of thiouracil decreased milk yield by 10·7%, decreased milk fat and lactose, and increased the chloride content.

Thyroxine decreased the ascorbic acid content of the milk by 25%; thiouracil increased it by 24%, but when the dosage of thiouracil was halved the increase was only 10%. Thyroxine did not affect the total thiamine content of the milk; thiouracil caused a small but statistically significant decrease. Thyroxine increased markedly the cocarboxylase content

and slightly increased the protein-bound thiamine fraction; these increases were mostly at the expense of free thiamine. Thiouracil changed the partition of thiamine in the opposite way.—N. Dean.

Weiss, K. E. (1953). **The significance of reflex salivation in relation to froth formation and acute bloat in ruminants.**—*Onderstepoort J. vet. Res.* **26,** 241 - 250. [Author's abst.] **1980**

The question whether frothing of ruminal ingesta is a cause of bloat has been a subject of much controversy in the past. The author has shown that frothing of ruminal ingesta is the main cause of bloat in sheep grazing on green lucerne.

Froth formation occurs when rapid gas formation takes place in ruminal ingesta of a thick tenacious consistency. The consistency of ruminal ingesta in turn is influenced by reflex salivary secretion, which is stimulated by the presence of coarse material in the fore-stomachs. The amount of saliva secreted therefore depends on the physical condition of the feed. When the physical condition of a feed is such as to provide adequate stimulus for reflex salivation the consistency of the ruminal contents will become watery and froth formation will be obviated. The explanation for the protective action of hay in the prevention of bloat is based on this finding.

It was shown that the condition and type of lucerne fed has a direct bearing on the occurrence of frothy bloat. Succulent lucerne causes frothy bloat due to inadequate stimulation of reflex salivation, whereas stalky lucerne provides sufficient irritation to cause a copious salivary flow, thus reducing the consistency of the ingesta and preventing frothy bloat.

Lindahl, I. L., Cook, A. C., Davis, R. E. & Maclay, W. D. (1954). **Preliminary investigations on the role of alfalfa saponin in ruminant bloat.**—*Science.* **119,** 157-159. **1981**

The authors described the extraction of a saponin from lucerne (*Medicago sativa*) and the experimental reproduction of bloat in 5 ewes, 2 goats and a heifer following administration of the saponin by mouth.—R.M.

Byers, S. O., Friedman, M. & Gunning, B. (1953). **Observations concerning the production and excretion of cholesterol in mammals. XI. The intestinal site of absorption and excretion of cholesterol.**—*Amer. J. Physiol.* **175,** 375-379. [Authors' summary copied *verbatim.*] **1982**

The small intestine of the rat was found to be responsible for the major portion of the cholesterol excreted into the intestinal contents. The distal half of the small intestine was the only portion capable of absorbing exogenously derived cholesterol.

McDonald, I. W. (1954). **The extent of conversion of food protein to microbial protein in the rumen of the sheep.**—*Biochem. J.* **56,** 120-125. [Author's summary modified.] **1983**

When sheep were fed a partially purified diet to which zein contributed 94% of the total nitrogen, it was found that approx. 40% of the zein was utilized by ruminal micro-organisms for the synthesis of their own proteins. This conclusion was based on the separation of the ethanol-soluble protein, zein, from the microbial protein in the digesta received by the duodenum. The conclusion was supported by the result of an experiment based on analyses of lysine in the foodstuffs, ruminal micro-organisms and abomasal contents.

The author gave reasons for suggesting that, in normal dietary régimes, a higher proportion of food protein would be converted in the rumen into microbial protein.

Wretlind, A. (1952). Aminosyrornas fysiologi och terapeutiska användning. **[Physiology and therapeutic use of the amino acids.]**—*Nord. VetMed.* **4,** 29-51. [In Swedish.] **1984**

W. reviewed the physiology of amino-acids. He discussed the therapeutic uses and the growth-stimulating effects of certain amino-acids and amino-acid mixtures, with particular reference to one proprietary preparation.

—R. B. Holcombe.

Saunders, L. Z. (1953). **Cerebrovascular siderosis in horses.**—*Arch. Path.* (*Lab. Med.*) **56,** 637-642. [Author's summary copied *verbatim.*] **1985**

Vascular siderosis was found in the brain of 15 out of 25 healthy horses over 6 years of age. Since it is so commonly found in apparently healthy older animals, its presence would have little or no diagnostic significance in animals presenting clinical symptoms of brain disease.

Santiago Luque, J. M. (1952). Nuevos estudios hematológicos sobre la anemia de los lechones. **[Haematology of piglet anaemia.]**—*An. Fac. Vet. Madrid.* **4,** 243-263. [English, French and German conclusions.] **1986**

The author stated that piglet anaemia is hypochromic microcytic, with anisocytosis and reduced reticulocyte count. Jolly bodies, polychromatic normoblasts and polychromatic ery-

throblasts appear in the circulating blood.

Although total iron content of the blood is decreased there is an increase in the serum iron content. The iron content also increases in the liver, spleen and renal epithelium. Bone marrow changes include reduction in numbers of the red cell series, and immaturity and overproduction of white cells.—I. W. JENNINGS.

KAPELLE, I. D. (1951). Onderzoek naar het kopergehalte van runderbloed en naar het koper- en cobaltgehalte van gras. [**The copper content of bovine blood and the copper and cobalt content of grass.**]—*Landbwk. Tijdschr.* **63**, 302. 1987

The average copper content of the blood of cattle affected with " likzucht " (a form of pica associated in the literature with hypocuprosis) was 23–110 mg./100 ml. as against 39–104 mg. in normal cattle. There was no significant difference in the copper content of grass from affected and from unaffected farms on sandy soils, but on " likzucht " farms the cobalt content was 0·09 mg./kg. dry matter, as against 0·32 mg. on unaffected farms.

In cases of pasture diarrhoea on peat soil the copper content of suspected grass was even higher (20 mg./kg.) than that of normal grass (12 mg./kg.).—C. A. VAN DORSSEN.

WIND, J. & DEYS, M. B. (1952). Weidediarrhee, kopergebrek en zuur-baseverhouding in gras. [**Diarrhoea in cows at pasture : copper deficiency and the acid-base equilibrium of grass.**]—*Landbwk. Tijdschr.* **64**, 23-44. [English summary.] 1988

According to analyses of pasture grazed by herds with " scouring " the authors concluded that excess alkalinity of the grass was associated with disturbances in the copper metabolism of the cows grazing it.—C. A. VAN DORSSEN.

GUBLER, C. J., LAHEY, M. E., CARTWRIGHT, G. E. & WINTROBE, M. M. (1952). **Studies on copper metabolism. X. Factors influencing the plasma copper level of the albino rat.**—*Amer. J. Physiol.* **171**, 652-658. 1989

Blood copper levels in rats are raised during inflammation and with thyroid depression. Inflammatory hypercupraemia was uninfluenced by A.C.T.H.—JOHN SEAMER.

PICKUP, J., WORDEN, A. N., BUNYAN, J. & WOOD, E. C. (1954). **Chronic constipation in dairy cattle associated with a high level of zinc in the water supply.**—*Vet. Rec.* **66**, 93-94. 1990

Chronic constipation occurred in a herd of cattle when they were stall-fed during the winter. The drinking water contained 6–8 p.p.m. of zinc, the source of which was found to be a galvanized iron storage tank. Following treatment of the inside of the tank the zinc content of the water fell to 0·5 p.p.m., and there was no recurrence of constipation in the cattle.—R.M.

LIÉGEOIS, F. (1953). Kálium en magnesium in de pathologie. [**Potassium and magnesium in metabolic disorders.**] — *Vlaam. Diergeneesk. Tijdschr.* **22**, 152-175. 1991

From a discussion on the literature L. concluded that the role of potassium and magnesium in pathology is not yet solved. He pointed out that tetany is a syndrome, not a disease, and that it is dangerous to generalize on its cause.—C. A. VAN DORSSEN.

KUNKEL, H. O., BURNS, K. H. & CAMP, B. J. (1953). **A study of sheep fed high levels of potassium bicarbonate with particular reference to induced hypomagnesemia.**—*J. Anim. Sci.* **12**, 451-458. 1992

Addition of 5% potassium bicarbonate to the diet of sheep produced hypomagnesaemia without clinical symptoms. The authors discussed the possibility that high potassium intake may be associated with production of grass tetany.—G. B. S. HEATH.

SCHRÖTER, A. (1953). Die Lämmerkrämpfe des Schafes. [**A deficiency disease in lambs resembling swayback.**]—*Berl. Münch. tierärztl. Wschr.* **66**, 137-140. [English summary.] 1993

S. described a swayback-like disease seen in lambs born during winter time. It appears to be a deficiency disease resulting from the feeding of a diet poor in vitamins and minerals to ewes during pregnancy. The disease can be prevented by the provision of a sufficient diet for ewes and by postponement of the lambing time to a favourable season.—H. BEHRENS.

OBEL, A.-L. (1951). Om s. k. toxisk leverdystrofi hos svin. [**Toxic liver dystrophia in pigs.**]—*VI. Nord. Veterinärmötet.* [Proceedings of the VIth Scandinavian and Finnish Veterinary Conference, Stockholm, August 10th-11th 1951.] pp. 40-57. [In Swedish. English and German summaries.] Discussion pp. 57-58. 1994

The author studied 74 spontaneous cases of toxic liver dystrophia in pigs. In acute cases the liver is swollen, has a " mosaic " pattern and is covered with fibrin threads. There is dissociation of the liver cells, with regressive changes centrolobularly or over the entire lobules, resembling those found in rats deficient

in sulphur-containing amino acids and vitamin E. The lesions could be reproduced in healthy animals by feeding a diet composed of 73% wheat starch, 18% yeast, 6% cod-liver oil and 3% minerals. The administration of 150 mg. α-tocopherol acetate twice a week failed to prevent the development of lesions, but when 15% casein was added to the diet no lesions developed. Feeding of diets low in animal protein, or containing excessive cod-liver oil or mouldy food appears to be a predisposing factor.—H. WESTERMARCK.

GRIESEMER, R. D., FRAZIER, C. N. & BLANK, I. H. (1953). **Nutritional influences on the physiology of the skin : observations on the metabolism of vitamin A.**—*Medicine, Baltimore.* **32,** 293-321. **1995**

The authors discussed the literature with 117 references. They suggested that ultra-violet absorption and the use of radio-active isotope-tagged vitamin A may be useful methods of studying the transformations undergone by vitamin A in the normal process of keratinization. Another avenue of approach would be to study the effect of vitamin A on the synthesis of proteins from tagged amino acids by epidermal cells in tissue culture.—W. R. BETT.

LOWE, J. S., MORTON, R. A. & HARRISON, R. G. (1953). **Aspects of vitamin A deficiency in rats.**—*Nature, Lond.* **172,** 716-719. **1996**

The authors demonstrated the presence of hitherto unknown metabolites—probably dehydrogenation products of cholesterol or steroid hormones—in the liver of rats with severe vitamin A deficiency. This provides a new approach to the mode of action of vitamin A. They suggested that these findings may be of value in the interpretation of observations in hyperkeratosis (X disease).—N. DEAN.

COLLET, P., COULON, J., FLACHAT & MAGNY. (1953). Hypervitaminose D_2 mortelle chez un jeune chien. **[Fatal hypervitaminosis D_2 in a young dog.]**—*Bull. Soc. Sci. vét. Lyon.* **54-55,** 47-54. **1997**

P.M. examination of a 2-month-old dog, which had been given 45 mg. of calciferol within a fortnight, revealed a large calcification of the pyloric duodenal region.—D. POYNTER.

HARTLEY, W. J. (1953). **" Stiff lamb disease " in New Zealand.**—*N.Z. vet. J.* **1,** 137-142. [Author's summary modified.] **1998**

H. recorded the presence in New Zealand of a specific myopathy affecting lambs. It is probable that the same pathological process is involved as in " stiff lamb disease ".

MACKENZIE, J. B. & MACKENZIE, C. G. (1953). **Vitamin E activity of alpha-tocopherylhydroquinone and muscular dystrophy.** — *Proc. Soc. exp. Biol., N.Y.* **84,** 388-392. [Authors' summary and conclusions modified.] **1999**

The disuccinate of α-tocopherylhydroquinone was tested for anti-sterility activity by daily i/v injections in pregnant vitamin E-deficient rats. This anti-dystrophic compound was found to be devoid of the anti-sterility activity associated with α-tocopherol. Moreover, the injection of dystrophic rabbits with large curative doses of α-tocopherylhydroquinone, or its disuccinate, did not lead to the appearance of tocopherol in the serum. Both of these observations indicate that α-tocopherol hydroquinone is not converted to α-tocopherol to a significant extent in the body. It appears therefore that α-tocopherylhydroquinone is an anti-dystrophic factor or vitamin *per se*. Alpha-tocopherol, on the other hand, is the anti-sterility vitamin. It may possess anti-dystrophic activity as such, or alternatively, it may only be the provitamin for α-tocopherylhydroquinone. The authors discussed the separation of anti-dystrophic from anti-sterility activity with relation to the function of vitamin E in muscular dystrophy.

ALOISI, M., ASCENZI, A. & BONETTI, E. (1952). **Submicroscopical changes in muscles of vitamin-E-deficient rabbits.**—*J. Path. Bact.* **64,** 321-327. [Authors' summary slightly modified.] **2000**

The authors confirmed the findings of Matoltsy and Gerandás on the optical activities of the fibres of voluntary muscles extracted with the solvents of actomyosin. A negative birefringence appears in the previously isotropic bands after extraction, and the positive birefringence of the A bands fades away.

In the dystrophic muscles of vitamin-E-deficient rabbits the optical behaviour of fibres which have not yet undergone gross degeneration closely resembles that of normal muscles extracted with the actomyosin solvents. Degeneration appears to be preceded either by a loss of the positively-birefringent substance actomyosin, or by a reduction in its formation, or by a change in its submicroscopical patterns. The first two conditions seem the more probable.

Negatively-birefringent structures and materials are particularly resistant to degeneration. Their presence in grossly degenerated fibres demonstrates the prolonged persistence of some of the sub-structural patterns of the fibres.

Miller, C. O., Ellis, N. R., Stevenson, J. W. & Davey, R. (1953). **The riboflavin requirement of swine for reproduction.**—*J. Nutr.* **51,** 163-170. [Abst. from authors' summary.] 2001

A level of 1·25 mg. of riboflavin per lb. of feed is indicated as the practical minimum recommended allowance for breeding gilts and sows. Pig diets based on commonly used grains supplemented to afford the prescribed levels for protein and minerals will generally be adequate in riboflavin.

Miller, O. N., Goddard, J. W., Olson, R. E. & Stare, F. J. (1953). **Folic acid deficiency in the duck.**—*J. Nutr.* **49,** 65-77. 2002

The authors produced folic acid deficiency in ducklings. It was characterized by macrocytic anaemia, heart muscle changes, enlargement of the liver and depressed amylase and trypsin activity. Deficiency symptoms were not relieved by vitamin B_{12}.—John Seamer.

Hibbs, J. W. & Pounden, W. D. (1953). **Vitamin D seen as aid in warding off milk fever.**—*Fm. Home Res.* **38,** 108-109. 2003

A brief report of the authors' work on the prevention of milk fever in cows by the administration of massive doses of vitamin D for a short period before and after parturition. [See *V.B.* **22,** 2168.]—R.M.

Vigue, R. F. (1952). **Influence of protein on the milk fever complex (A four year study). Part I : Milk fever.**—*Vet. Med.* **47,** 215-218 & 238. [See also *V.B.* **23,** 2038.] 2004

Addition of animal protein to the ration of cows which had either milk fever or ketosis reduced the disease incidence.—L. M. Jones.

Robertson, A. & Thin, C. (1953). **Studies on ketosis of ruminants.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **1,** Pt. 1. 531-535. [In English. French and German summaries.] 2005

A study of the biochemical changes accompanying starvation ketosis in the pregnant or lactating ruminant showed that free acetone and β-hydroxybutyric acid were the outstanding ketones in the blood and milk whilst acetone and isopropanol were most prominent in the rumen. The authors suggested that aceto-acetate arises from the catabolism of fat and is rapidly converted into acetone and β-hydroxybutyric acid. The administration of acetone *per os* gave rise to all the other ketones.—J. A. Nicholson.

McAuliff, J. L., Phillips, W. V. & Steele, J. R. (1954). **Treatment of ketosis in dairy cattle. A clinical report.**—*Vet. Med.* **49,** 69-74 & 88. [Abst. from authors' summary.] 2006

Forty-five cows with primary and secondary ketosis were treated with adrenomone (an adrenocortical hormone preparation). Biochemical assays of blood sugar, and blood and urine ketones were made before and during therapy. The treatment produced alleviation of symptoms of ketosis, with a return to normal in milk production, blood sugar and ketone values, and gain in body weight. Only eight of the cows required treatment after the third day.

Talsma, D. (1953). Enkele proeven met cortison bij acetonaemie van het rund. [**Treatment of five cases of ketosis in cattle with cortisone.**]—*Tijdschr. Diergeneesk.* **78,** 1011-1013. [English, French and German summaries.] 2007

Of 5 cows treated with 50 mg. of " adresson " (a cortisone preparation) i/m three times at 12-hour intervals, 4 showed only a slight temporary improvement.—C. A. van Dorssen.

Gengoux, P. & Pierreux, A. (1953). Au sujet des accidents provoqués par l'administration intra-veineuse de gluconate de calcium. [**Accidents following intravenous injections of calcium gluconate.**]—*Ann. Méd. vét.* **97,** 199-204. 2008

Two cows died following i/v injection of calcium gluconate and the authors made tests on dogs to study its action. They found that hypertension developed in dogs given either the gluconate or the borogluconate i/v. They surmised that this condition resulted from the colloidal state of the drug when given too rapidly and in high concentration.—R. Marshall.

Johns, A. T. (1953). **Fermentation of glycerol in the rumen of sheep.**—*N. Z. J. Sci. Tech.* Sect. A. **35,** 262-269. [Author's summary modified.] 2009

In order to investigate the claim that glycerol is more effective than glucose as a cure for pregnancy toxaemia in ewes, J. compared the products of fermentation of these two materials in the rumen of sheep. It appears that glycerol is likely to be superior therapeutically to glucose as the former is converted to propionic acid, an antiketogenic substance, while the latter gives rise to a mixture of acetic, propionic, and butyric acids, the last of which is ketogenic.

Jarrett, I. G. & Potter, B. J. (1953). **Insulin tolerance and hypoglycaemic convul-**

sions in sheep.—*Aust. J. exp. Biol. med. Sci.* **31**, 311-318. [Authors' summary modified.] **2010**

Adult sheep did not develop convulsions after the injection of massive doses of insulin into the systemic circulation, even though the concentration of sugar in the blood was reduced to very low levels for long periods. Denervation of the adrenal glands renders the adult sheep sensitive to the i/v injection of insulin, and convulsions ensue after small doses. Relatively small doses of insulin injected s/c into adult sheep are followed by long periods of hypoglycaemia terminating in severe and prolonged convulsions.

Young lambs are much more sensitive to i/v insulin than adult sheep; tolerance increases as the lambs become older. The lamb behaves like a non-ruminant in its response to both i/v and s/c insulin.

Once convulsions begin in adult sheep after s/c insulin, an apparently irreversible state is often reached which is usually refractory to i/v glucose therapy in spite of a return to normal blood sugar level.

ARCHIBALD, J. & WHITEFORD, R. D. (1953). **Canine atrophic pancreatitis.**—*J. Amer. vet. med. Ass.* **122**, 119-125. **2011**

The authors discussed the physiology and aetiology of atrophic pancreatitis in dogs and recorded some case-histories. Characteristic symptoms include a voracious appetite, emaciation, and the passing of bulky, offensive putty-coloured faeces; the urine and blood findings are normal. P.M., the pancreas is either small or very small, or there is a replacement fibrosis, and, only in advanced cases, atrophy of the islets of Langerhans, giving a concomitant diabetes mellitus. Early cases can be maintained on a normal diet under continuous therapy with sorethitan mono-oleate and desiccated pancreatin.—BARBARA G. CLARKE.

COFFIN, D. L. & THORDAL-CHRISTENSEN, A. (1953). **The clinical and some pathological aspects of pancreatic disease in dogs.**—*Vet. Med.* **48**, 193-198. **2012**

Of 1,800 dogs examined P.M., 70 had pancreatic disease. The authors described 4 distinct clinical and pathological types, namely acute necrotic, chronic, fibrotic and atrophic. Obesity is evident in the acute and chronic forms and fat is present in the faeces, while glycosuria and a rise in blood sugar levels appear later in the disease. The authors recommended the administration of pancreatic extract, and supportive therapy.—E. J. L. SOULSBY.

LEVADIE, B. T. H., MCGINNIS, J. & CARVER, J. S. (1952). **The effect of diethylstilboestrol on mortality caused by visceral gout in chicks.**—*Arch. Biochem.* **40**, 68-70. [Authors' summary modified.] **2013**

Treatment of chicks by the s/c implantation of 6 mg. stilboestrol greatly reduced mortality from " visceral gout ". This effect was particularly pronounced with male birds.

See also absts. **1822** (ruminal flora in cows fed different rations); **1823** (feeding of cud to calves); **2140** (report, Great Britain); **2142** (report, Canada).

DISEASES, GENERAL

BODANSKY, O. [Professor of Biochemistry, Cornell University Medical College.] (1952). **Biochemistry of disease.** pp. xiii + 1208. New York & London: The Macmillan Co. 2nd Edit., revised and enlarged. $12.00. 90s. **2014**

The author has produced a comprehensive and largely rewritten work similar in quality to that first prepared by his late brother before the second world war. Although the book is intended primarily for the medical practitioner, the worker entering or established in the veterinary field will find here a very useful background to the application of biochemical methods to the diagnosis and treatment of clinical conditions.

One of the really good features of the book is the wealth of references at the end of each section, this helps to make it a good introduction to the biochemical aspects of any particular subject.

Criticism may be levelled in places at the short treatment of biochemical knowledge on some subjects. For example clotting is dismissed in two pages, and tuberculosis in four. It is doubtful whether vitamin K need have been mentioned in view of its casual treatment. These minor defects may be forgiven in view of the treatment accorded most subjects, it being obvious in an ambitious work of this nature that a good deal of pruning had to be employed.

The publishers are to be congratulated on the excellent binding and quality of printing and paper.—D. S. PAPWORTH.

GALLO, P. & VOGELSANG, E. G. (1951). Nosografía veterinaria Venezolana. **[Diseases of animals in Venezuela.]**—*Rev. Med. vet., Caracas.* **10**, 3-46. **2015**

The authors stated that records of animal diseases in Venezuela were not kept before 1930.

They gave an account of the climatic conditions and of the livestock of Venezuela and a detailed list of the diseases arranged according to their causation, those relating to protozoa, arthropods and helminths containing names of the parasites concerned.

They gave a list of 165 references to articles concerning such matters in Venezuela.

—I. W. Jennings.

Margadant, C. (1953). Ein Beitrag zur Geschichte der Tierseuchenbekämpfung im Freistaat Gemeiner Drei Bünde. (1500 bis anfangs 1800 n. Chr.) [**History of the control of diseases of animals in Switzerland from 1500 to 1800 A.D.**]—*Schweiz. Arch. Tierheilk.* **95,** 375-397. 2016

M. reviewed literature on the occurrence of F. & M. disease, rinderpest, bovine contagious pleuro-pneumonia, blackleg and anthrax in cattle and sheep, rabies in dogs, and glanders in horses, from the 16th to the 19th centuries in the ancient state of the Three Leagues, which now forms the canton Gräubunden in South-East Switzerland, and described the control measures which were applied.—H. Behrens.

Rausch, R. (1953). **Animal-borne diseases in Alaska and their public health significance.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **2,** Pt. 1. 1165-1171. [In English. French and German summaries.] 2017

Echinococcus granulosus infestation (transmitted mainly by sledge dogs), *Diphyllobothrium latum* infestation, and rabies are important diseases of human beings in Alaska. Bears were found to be heavily infested with *D. latum,* which they derived from eating red salmon (*Onchorhynchus nerka*).—R.M.

Hammerstrom, R. N., Adams, F. H., Bussman, J. & Lillehei, C. W. (1952). **Normal mucoprotein values in the dog; response to distemper vaccine and to endocarditis.**—*Proc. Soc. exp. Biol. N.Y.* **79,** 527-531. 2018

Determination of the normal serum mucoprotein-tyrosine level in 55 dogs gave a mean value of 25 mg%. Following distemper vaccination in 23 dogs there was a marked temporary rise, with a peak in 2 weeks and return to normal by 7 weeks.

Although there was a marked rise following cardio-vascular stress in dogs with large arteriovenous fistulas, the mucoprotein-tyrosine level was found to be elevated to a much greater degree in dogs with fistulas and induced streptococcal endocarditis than in normal dogs.

—Barbara G. Clarke.

Clapham, P. A. (1954). **Disease in rabbits and hares.** [Correspondence.]—*Vet. Rec.* **66,** 100. 2019

C. examined 28 rabbits and 6 hares found dead or suspected of disease in parts of Hampshire and Wiltshire. Heavy helminth infestation was present in all the animals, coccidiosis in 13, neoplasms in 2, and *Treponema cuniculi* infection in one rabbit. Myxomatosis was not responsible for the heavy mortality amongst wild rabbits and hares in this area.—R.M.

Dimić, J. M. (1953). **The surgical treatment of periodical ophthalmia in horses.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **2,** Pt. 1. 929-932. [In English. French and German summaries.] 2020

D. described results of treatment of lesions of the eye resulting from periodic opthalmia in horses, including the treatment of hypopyon by puncture of the anterior chamber, and of synechia by iridectomy.—R.M.

Jocković, M. & Rahelić, S. (1952). [**Depigmentation of the hair of young horses.**]—*Acta Vet., Belgrade.* **2,** No. 2. pp. 51-56. [In Serbian. German summary.] 2021

An account of loss of pigment from the hair in brown and black horses that had been vaccinated against strangles and in others of the same unit that had recovered from severe attacks of the disease.—I. Martini.

Riek, R. F. (1953). **Allergic dermatitis of the horse.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **1,** Pt. 1. 664-669. [In English. French and German summaries.] 2022

R. described the skin disease of horses in Australia commonly known as "Queensland itch". Although microfilariae of *Onchocerca cervicalis* were common in the skin of horses in Queensland, they were not always present in cases of dermatitis. R. considered that the disease was allergic in nature, caused by the bites of sandflies (*Culicoides*), and reproduced skin lesions by the i/d inoculation into susceptible horses of an antigen prepared from a hitherto unnamed species of *Culicoides.*—R.M.

Köhler, H. & v. Hein, D. (1953). Zur Frage der Bedeutung histologischer Veränderungen an den intramuralen Ganglien des Dickdarmes vom Pferd bei Kolik. [**Significance of histological changes in the sympathetic nerve ganglia in the intestinal wall in horses with colic.**]—*Berl. Münch. tierärztl. Wschr.* **66,** 285-288. [English summary.] 2023

In the histological examination of sympathetic ganglia of the intestinal wall from 7

horses which died from colic and from 8 healthy slaughter horses, the extent to which there was vacuolation, absence of nucleus, swelling of the cells, hypertrophy or rupture of neurofibrils, was greater in the colic cases.—H. BEHRENS.

WITHERS, F. W. (1952-53). **Mortality rates and disease incidence in calves in relation to feeding, management and other environmental factors. Parts. I-VI.**—*Brit. vet. J.* **108,** 315-328, 382-405, 436-441 & 472-483; **109,** 65-73 & 122-131. **2024**

During the 3-year period 1946-49, a survey of disease and mortality among calves up to 6 months of age was made in 44 herds in England, Wales and Southern Scotland. Of these, 35 were dairy herds and the remainder beef or dual purpose; the average size of the herds was 83 and the total births numbered 9,327.

The mortality of heifer calves in dairy herds was found to be 6·8% in England and Wales, but 11·9% in Scotland, and the mortality in beef and dual-purpose herds was 5·2% for males and 3·8% for females.

Mortality was highest in the early part of the year and could be related to climatic conditions. Abortions and stillbirths accounted for more than half the total loss of calves; otherwise the chief single cause of loss was *Bact. coli* infection. The death rate in pail-fed calves up to one month old was two and a third times greater than in calves allowed to suck colostrum naturally. The main factors influencing calf mortality were considered to be climate, the method of feeding colostrum, and the personal factor.—J. A. NICHOLSON.

KALCHSCHMIDT, H. G. (1948). Die " Fremdkörperzone ", eine Headsche Zone beim Rind. **[The " foreign body zone " of skin sensitivity in cattle.]**—*Schweiz. Arch. Tierheilk.* **90,** 433-443. **2025**

K. described a region of increased sensitivity of the skin above the 6th–8th thoracic vertebrae in cattle with foreign body reticulitis. He considered this region of hyperalgesia to be similar to the zones of referred pain described by Head in human beings.—R.M.

ANDRES, J. (1952). Zur modernen Diagnose, Prophylaxe und Therapie der Reticulitis traumatica des Rindes. (Head'sche Zone—Elektroskopie—Magnet-Sonde.) **[Diagnosis and treatment of traumatic reticulitis of cattle.]**—*Schweiz. Arch. Tierheilk.* **94,** 287-295. [English, French and Italian summaries.] **2026**

The author found the clinical test described by Kalchschmidt [see preceding abst.] to be useful. He pointed out the limitations of the " mine detection " type of apparatus. A magnetic probe similar to those used in opthalmology for the withdrawal of foreign bodies had some value for the withdrawal of magnetic objects, but its use could cause damage. Surgical removal is still a necessary procedure.

WESTHUES, M. & RIEGER, H. (1953). Über den Schmerz und die Headsche Zone bei der Fremdkörpererkrankung des Rindes. **[Referred pain and the foreign body syndrome in cattle.]**—*Berl. Münch. tierärztl. Wschr.* **66,** 101-105. [Abst. from English summary. **2027**

In the " foreign body " syndrome pain is present only when the diaphragm and the abdominal wall are involved. The authors denied that the clinical test described by Kalchschmidt [see absts. 2025 & 2026] is of value in the diagnosis of this condition.

RATNATUNGE, P. C. C. (1953). **Lymphadenitis of unknown etiology among dairy cattle at Government Farm, Horana.**—*Reporter, Ceylon.* **1,** No. 2. p. 38. [Mimeographed.] **2028**

A nodular condition of the skin affecting mainly the limbs and ventral aspect of the trunk occurred in the majority of animals in a herd of cattle in Ceylon, and was of economic importance in that it reduced milk yield and condition. Bacteriological examination of pus from the nodules was negative. The condition was treated successfully with i/v neoarsphenamine and topical application of red mercuric oxide. [The rather brief description given in this article suggests some resemblance to the disease known as " Lumpy Skin Disease " in S. Africa.]

—C. A. E. BRIGGS.

COMPTON, L. S. (1953). **Varicosis of the milk veins in dairy cattle.**—*Cornell Vet.* **43,** 362-365. **2029**

Varicosis of the " milk veins " occurs in high production cows, usually in those of heavier breeds; C. recorded death from rupture of milk veins in 12 cows within a period of 6 months, and gave 4 representative case histories. He advocated emergency slaughter in such cases.

—C. A. E. BRIGGS.

PUNTRIANO, G. O. (1954). **Urinary calculi in livestock—a new concept of its etiology and possible prevention with hyaluronidase.**—*J. Amer. vet. med. Ass.* **124,** 55-62. **2030**

A decrease in protective urinary colloids may lead to the precipitation of crystalloids or " sensitization " of the hydrophobic colloids. P. compared the turbidity of the urine before and after hyaluronidase treatment, together with

the colloidal activity and surface tension in specimens from healthy sheep and steers and from three steers with calculi; dried films of the same specimens were examined microscopically.
—F. G. Clegg.

Cohrs, P. & Schulte, F. (1952). Aluminiumhydroxydgranulome bei Tieren. **[Granuloma in animals caused by aluminium hydroxide.]** —*Zbl. allg. Path. path. Anat.* **89,** 77-82. 2031

The authors described the histology of lesions produced by aluminium-adsorbed F. & M. disease vaccine in the brisket of cattle; they showed that the lesions were due to aluminium hydroxide. They emphasized the presence of basophile macrophages, and mentioned the presence of aluminium-protein crystalline structures in the granuloma.—E. Cotchin.

Plowright, W. (1954). **Paralysis of sheep in Kenya due to focal and symmetrical spinal poliomalacia.**—*Vet. Rec.* **66,** 25-27. [Author's summary modified.] 2032

An account of hitherto undescribed paralytic disease in a flock of sheep in the Rift Valley of Kenya. Pathologically, the condition is characterized by a focal symmetrical spinal poliomalacia quite unlike that seen in any viral (or other) myelitis of animals or man. Attempts to transmit the disease to sheep and laboratory animals had so far failed, as had attempts to isolate a causal micro-organism. In the affected flock as a whole, there was anaemia associated with hypocupraemia.

Larsen, N. B. & Tøndering, E. (1954). Nephritis interstitialis leucolymfocytaria hos svin. **[Leucocytic interstitial nephritis in pigs.]**—*Nord. VetMed.* **6,** 35-46. [In Danish. English and German summaries.] 2033

The authors discussed the literature, and described the pathology, histology and bacteriology of the condition. Of 101,668 slaughtered pigs 0·18% were affected. It was suggested that faecal contamination of the vulva may be an important route of infection.—R. B. Holcombe.

Fankhauser, R. & Wyler, R. (1953). Die Nervenkrankheiten des Schweines. **[Nervous diseases of the pig.]**—*Schweiz. Arch. Tierheilk.* **95,** 585-619. [English, French and Italian summaries. Abst. from English summary.] 2034

The authors reviewed literature on diseases of the nervous system of pigs and discussed their personal experiences, with some introductory remarks on anatomy, the c.s.f. and clinical methods. As the latter are rather restricted, P.M. examination and histological investigation are of great importance. Brief mention was made of the following diseases: hereditary abnormalities and malformations (trembling disease and congenital paralysis, lethal muscle contracture, " epilepsy," meningocele and encephalocele, hydrocephalus, spina bifida, anencephaly), purulent and non-purulent inflammations, the latter including neurotropic virus diseases (rabies, Teschen disease, sporadic encephalomyelitis), and swine fever, Aujeszky's disease and various other infections in which there is concomitant inflammation of the brain. They also discussed TB., leptospirosis, so-called independent meningitis and protozoan infections. They discussed lesions of the c.n.s. in connexion with diseases of the liver, abnormalities of the vertebral column and the spinal cord, vitamin deficiencies, intoxications and metabolic disorders. The last three groups present great difficulty in diagnosis, both clinically and anatomically. They listed 87 references.

Harthoorn, A. M. (1954). **Surgical shock in the dog.**—*Tijdschr. Diergeneesk.* **79,** 48-77. [In English. French, German and Dutch summaries.] 2035

H. gave a historical account of the toxaemic, oligaemic and neurogenic theories of shock, with more than 100 references. He described experiments with dogs involving the handling of abdominal viscera, cooling of abdominal organs (tested by results of placing in the abdominal cavity latex containers filled with water at 15°C.) and haemorrhage, to determine the role of each individually. Any one of these factors could cause shock.
—F. G. Clegg.

Hoerlein, B. F. (1953). **Intervertebral disc protrusions in the dog. I. Incidence and pathological lesions. II. Symptomatology and clinical diagnosis. III. Radiological diagnosis.**—*Amer. J. vet. Res.* **14,** 260-269, 270-274 & 275-283. 2036

An excellent exposition of the subject, amply illustrated, with particular reference to dorsal protrusion into the spinal canal. H. described 4 different disc lesions, besides a spondylitis deformans. He suggested that the condition may occur without apparent symptoms. He discussed clinical examination including reflexes and gave a detailed differential diagnosis scheme. He described and illustrated the use of contrast radiology.—Barbara G. Clarke.

Antalovský, A. (1953). Noma — zvláštní forma gangrenosní stomatitidy. **[Noma—gangrenous stomatitis—in dogs and a piglet.]** —*Veterinářství, Brno.* **3,** 190-192. 2037

A note on localized gangrenous stomatitis of

unknown aetiology in two dogs and a piglet. The condition responded to treatment with vitamins B and C, penicillin and sulphonamides. —E.G.

FACQ, L. (1950). L'emphysème pulmonaire chronique du chien et les états associés. Essais de traitement par la novocaine intraveineuse. **[Chronic pulmonary emphysema in dogs.]**—*Thesis, Alfort.* pp. 64. **2038**

A clinical article on chronic pulmonary emphysema in dogs.—BARBARA G. CLARKE.

DARMAN, A. J. & ERNST EN SIKAR, A. M. (1952). Myositis eosinophilica bij duitse herdershonden. **[Eosinophilic myositis in Alsatian dogs.]**—*Hemera zoa.* **59,** 153-157. [English, French and German summaries.] **2039**

An account of a case of bilateral symmetrical eosinophilic myositis of the triceps brachii and of the biceps femoris muscles in an Alsatian dog.—C. A. VAN DORSSEN.

JUNGHERR, E. (1953). **Neuropathologic differentiation of symptomatic paralysis in fowl.**—*Proc. XVth Int. vet. Congr. Stockholm.* 1953. **2,** Pt. 1. 1062-1067. [In English. French and German summaries.] **2040**

J. discussed the differential diagnosis of diseases of fowls accompanied by paralysis, by comparison of the microscopic lesions of the brain and peripheral nerves.—R.M.

See also abst. **1977** (nutrition in relation to diseases in swine).

POISONS AND POISONING

BEIJERS, J. A. (1952). Loodvergiftiging. **[Lead poisoning.]**—*Tijdschr. Diergeneesk.* **77,** 587-605. **2041**

B. described 3 cases of acute lead poisoning of cattle, one of which was caused by ingestion of red-lead paint, the others by cattle-cake contaminated with lead. The lead was unevenly distributed in the cattle-cake, and the lead content of the liver in the dead cows varied greatly. The liver of a cow given 5 g. lead acetate contained 1,160 mg.Pb/kg. B. discussed lead poisoning of man and animals.

The death of 28 horses near a lead works was ascribed to arsenic poisoning by van den Burg [*V.B.* **21,** 2668], but in B.'s opinion probably resulted from lead poisoning. He gave the results of analyses of grass and hay from the pastures near the works. Hay containing 22 mg.Pb/kg. was not toxic for goats and calves. Lead poisoning of fowls was also discussed.—A. J. ULTÉE, JR.

PETERS, R. (1953). **Significance of biochemical lesions in the pyruvate oxidase system.**—*Brit. med. Bull.* **9,** 116-122. **2042**

A review of the biochemical lesions in thiamine deficiency, tervalent arsenical and fluoroacetate poisonings.—JOHN SEAMER.

GREENWOOD, D. A., HARRIS, L. E., BIDDULPH, C., BATEMAN, C. Q., BINNS, W., MINER, M. L., HARRIS, J. R., MANGELSON, F. & MADSEN, L. L. (1953). **Feeding rats tissues from lambs and butterfat from cows that consumed DDT-dusted alfalfa hay.**—*Proc. Soc. exp. Biol., N.Y.* **83,** 458-460. **2043**

The authors fed lambs and cows for 4 months with hay which had been dusted with D.D.T. In another group, lambs were given D.D.T. by mouth. Butterfat from the milk of the cows, and leg muscle and mesenteric fat from the lambs, were fed to separate lots of rats for 16 weeks, with suitable controls. The D.D.T. content of the mesenteric fat of the rats was estimated and compared with the D.D.T. content of the butterfat, and the muscle and fat of the lambs.

There was no significant difference between the amount of D.D.T. ingested and the food consumption, growth, and histological appearance of the liver and kidneys of the rats, neither was there any significant difference in these respects between rats receiving D.D.T. and controls.—R.M.

ROULSTON, W. J., HITCHCOCK, L. F., TURNER, A. W. & CAMPBELL, A. D. (1953). **The effect on cattle of long-continued cutaneous applications of DDT.**—*Aust. J. agric. Res.* **4,** 469-480. **2044**

Cattle were subjected to a weekly cutaneous application of 22·5 g. D.D.T. in peanut or substitute oils for 3 years. Except for a brief period in the second year of one experiment no signs of poisoning were observed. In animals examined P.M. during and at the conclusion of the experiments D.D.T. was found in the tissues, especially the fatty tissues, in amounts up to 425 p.p.m., but no histological evidence of toxicity was found. It was concluded that any likely rate of dipping in aqueous suspensions of 0·5% *pp'*-D.D.T. for tick control would be quite harmless to cattle.—M. D. MURRAY.

BARNES, J. M. (1953). **Toxic hazards of certain pesticides to man.**—*W. H. O. Monograph Series. No.* 16. pp. 129. 7s. 6d. 2045

This is a survey of the existing information on acute and chronic toxicity for mammals of parasiticides used on crops and on livestock. B. dealt with chlorinated hydrocarbon and organic phosphorus insecticides, with due reference to large and small animals. There is a bibliography of 689 references.—D. W. JOLLY.

MCGIRR, J. L. & PAPWORTH, D. S. (1953). **Toxic hazards of the newer insecticides and herbicides.**—*Vet. Rec.* **65,** 857-862. 2046

The authors described the mode of attack and symptoms of dinitro- and organo-phosphorus poisoning in man and animals. Data on lethal doses had been obtained by experimental poisoning of animals. After normal spraying, lethal doses could be ingested by animals from a few square yards of sprayed crops, but breakdown resulting from certain weather conditions is usually rapid (less than 4–5 weeks). Care must be taken that there is no accidental contamination of grazing land.—BERYL A. KAY.

HAUGHEY, K. G. & COOPER, B. S. (1953). **An outbreak of bovine hyperkeratosis in New Zealand.**—*N. Z. vet. J.* **1,** 99-103. 2047

The authors described clinical and P.M. findings in hyperkeratosis in calves; 10 calves were involved and all died or were slaughtered. The condition was associated with chlorinated naphthalene timber preservative with which the shed occupied by the calves had been treated some months previously. The substance also appeared to have been responsible for abortion and foetal death in 10 of 12 cows on the same premises.—C. A. E. BRIGGS.

KELSEY, J. M. (1953). **Hyperkeratosis and other complications in animals. Chlorinated hydrocarbons as possible causative agents.**—*N. Z. vet. J.* **1,** 109-112. 2048

A review of the literature on the toxicity of chlorinated hydrocarbons and their relationship to hyperkeratosis in livestock. K. also discussed the physical and chemical principles involved and made recommendations for safety tests of these substances.—C. A. E. BRIGGS.

CARE, A. D. (1954). **Goitrogenic properties of linseed.**—*Nature, Lond.* **173,** 172-173. 2049

Goitre was observed in lambs from ewes fed a ration containing linseed meal. The condition could be prevented by adding potassium iodide or di-sodium *l*-thyroxine to the drinking water of the ewes. The effect of a diet containing linseed meal with or without potassium iodide, or cyanide, or thiocyanate, on mice was estimated by measuring the rate of absorption of radio-active iodine injected i/p. It was concluded that the goitrogenic principle in linseed was a thiocyanate.—R.M.

DYBING, O. (1951). Aconitum-alkaloidenes toksikologi. [**Toxicology of the aconite alkaloids.**]—*VI. Nord. Veterinärmötet.* [Proceedings of the VIth Scandinavian and Finnish Veterinary Conference, Stockholm, August 10th-11th 1951.] pp. 283-287. [In Norwegian. English summary.] 2050

Aconitine (acetylbenzoylaconine) is 20–40 times more toxic than lappaconitine (acetylanthranyllappaconine) from *Aconitum septentriole* which has a higher alkaloid content than *A. napellus*. In aconitine poisoning 1 μg. of the substance can be demonstrated by the occurrence of a vomiting-like reflex on i/v injection into mice. Lappaconitine does not give this reaction, but even 5–10 μg. are demonstrated by paper chromatography. R_F values of two-dimensional paper chromatography for lappaconitine and pikrolappaconitine are the same, but the latter gives a blue fluorescence in ultraviolet light and a red colour reaction by diazotizing and coupling with β-naphthol. [R_F is the ratio of the distance travelled by the solute to that travelled by the solvent.]

—H. WESTERMARCK.

FOURIE, P. J. J. (1953). **Does bovine congenital porphyrinuria (pink tooth) produce clinical disturbances in an animal which is protected against the sun?**—*Onderstepoort J. vet. Res.* **26,** 231-233. [Author's summary modified.] 2051

An ox, affected with bovine congenital porphyrinuria (pink tooth) and excreting as much as 1·6 g. of total porphyrins in faeces and urine per day, was still in reasonably good health at the age of 18 years. There was a slight anaemia, marked macroscopic pigmentation of the teeth and the bones, marked microscopic pigmentation of the organs, but no ill effects resulting from the porphyrinuria were demonstrable whilst the animal was stabled during the day.

OLSON, T. A. (1952). **Toxic plankton.**—*Wat. & Sewage Wks.* **99,** 75-77. 2052

The author referred to an epidemic at Lake Alexandrina, South Australia, in 1945, in which large numbers of domestic animals died after drinking plankton in the lake water ("water bloom" poisoning). The plankton had been concentrated by an onshore wind and a poison was demonstrated both in the plankton and in the surrounding water. In work with plankton

poisoning in Minnesota the poison was not identified, but tests revealed marked changes from time to time in its toxicity for mice when injected s/c.—A.S.

Pérez, M. & Andersen, H. (1953). Intoxicación de los animales con *Cestrum Parqui* (L'Herit). **[Poisoning in animals with *C. Parqui* (green cestrum) in Chile.]**—*Rev. Soc. Med. vet., Santiago.* **4,** No. 7. pp. 1-6. **2053**

Acute and subacute experimental poisoning were set up in goats, sheep, rabbits and g. pigs by the administration of dried leaves of the shrub, *C. Parqui.* The characteristic lesions were generalized congestion, petechial haemorrhages and partial or complete degeneration of liver lobules.—J. A. Nicholson.

Hiroe, I. (1952). **[Chloropicrine poisoning in cattle.]**—*J. Jap. vet. med. Ass.* **5,** 16. **2054**

An account of poisoning in a cow following accidental inhalation of chloropicrin gas which was being used to disinfect a building. The animal recovered following the i/v injection of normal saline solution containing caffeine and sodium benzoate, and of sodium thiosulphate solution.—Kogi Saito.

See also abst. **2140** (report, Great Britain).

PHARMACOLOGY AND GENERAL THERAPEUTICS

(For treatment of specific infections see under the appropriate disease)

Hupka, E. & Behrens, H. (1953). Die Bedeutung der Bluttransfusion für Pferde mit inneren Erkrankungen. **[Blood transfusion therapy in horses.]**—*Berl. Münch. tierärztl. Wschr.* **66,** 234-237. [English summary.] **2055**

A general account of the technique of blood transfusion in horses used at Hanover, including two preliminary tests to safeguard as far as possible against the use of incompatible blood: cross reaction of donor r.b.c with recipient's serum, and the test described by Oehlecker (1941), *i.e.,* the i/v injection of 20–40 ml. of donor's blood into the recipient. Even when both these tests give negative reactions the donor in question may be unsuitable. The indirect method of transfusion was found to be preferable, repeated small transfusions giving most satisfactory results.

Hallgren, W. & Björck, G. (1953). Användning av intravenös droppinfusion på större husdjur. Teknik och indikationsområde. **[Technique and indications for use of intravenous drip infusion in large animals.]**—*Nord. VetMed.* **5,** 1-32. [In Swedish. English and German summaries.] **2056**

For prolonged i/v administration of drugs to large animals, liquids were infused by the continuous drip method. In cases of tetanus, barbiturates, magnesium sulphate, myanesin, glucose and vitamins were given in this way, and glucose, with or without bicarbonate, in cases of ketosis, fatty infiltration of the liver and acidosis. Even if emergency slaughter was necessary in the latter cases, treatment removed acetone odour from the flesh, so that carcasses could pass at meat inspection.—F. R. Harris.

Bild, C. E. (1954). **Clinical experience with blood, plasma, and electrolyte infusions in dogs.**—*Vet. Med.* **49,** 25-30. **2057**

B. described 17 cases in which the use of blood, plasma, and electrolyte infusions aided a rapid recovery in a variety of disease conditions in dogs and, in some, proved life saving.

—A. Ackroyd.

Schepp. (1952). Tödliches Penicillin. **[Harmful penicillin.]**—*Dtsch. tierärztl. Wschr.* **59,** 100-102. **2058**

A general discussion on the use that is being made of penicillin and certain other antibiotics as food supplements, with comment on precautions required when so used.—W. R. Bett.

Anon. (1954). **Hypersensitivity to penicillin.**—*Lancet.* **266,** 31-32. **2059**

An annotation dealing with deaths in human beings attributable to the injection of penicillin, with a discussion on the probable cause of death.—R.M.

Ben-David, B. (1953). **[Allergic reactions in cattle after treatment with sulphonamides and penicillin.]**—*Refuah vet.* **10,** 155-156. [In Hebrew.] [Abst from English summary pp. 172-173.] **2060**

Two case reports, of a bull in which shock and a skin eruption followed the injection of 50 g. sulphamerazine sodium, and of a cow in which a skin eruption of the udder developed

following treatment of mastitis with penicillin and streptomycin.—R.M.

Dalgaard-Mikkelsen, S., Poulsen, E. & Simesen, B. (1953). Sulfadimidin og sulfatiazol til ungsvin. Resorption, distribution og elimination. **[Absorption, distribution and elimination of sulphamethazine and sulphathiazole in young pigs.]**—*Nord. VetMed.* **5**, 965-981. [In Danish. English and German summaries.] 2061

The authors studied the blood concentration, acetylation, binding on plasma protein, distribution in the tissues and renal excretion of sulphamethazine and of sulphathiazole in young pigs following a single i/p or i/m injection. The excretion of the former drug took 10 times as long, it was more slowly acetylated and more was bound on plasma protein than with the latter; its excretion into the alimentary canal was also more rapid. Toxic symptoms developed following i/p injection of sulphamethazine at a dosage rate of 0·80 g. per kg.

—R. B. Holcombe.

Vodzinski, B. K. (1953). **[Treatment of respiratory diseases by induced sleep.]**—*Veterinariya, Moscow.* **30**, No. 10. pp. 50-54. [In Russian.] 2062

Pulmonary emphysema was induced in 21 dogs by causing them to inhale sulphur trioxide gas until symptoms of distress appeared. They were then put to sleep for 2–3 hours with a small dose of thiopentone sodium. The narcotic treatment was repeated daily for 3–5 days. At the end of this time 19 dogs had recovered whereas 14 out of 18 untreated controls did not. Pneumonia induced by the intrapleural injection of silver nitrate solution was treated with similar results.

A conditioned reflex was established in 3 normal dogs by using for the first 7–12 days soporific injections accompanied by a certain noise, so that they subsequently fell into a deep sleep for 3–6 hours from the effect of the noise alone. Pneumonia was induced in these dogs, from which they recovered in 4–6 days after daily sleep treatment, and without the use of drugs.—F.A.A.

Wright, J. G. [Professor of Veterinary Surgery, University of Liverpool.] (1952). **Veterinary anaesthesia.** pp. viii+267. London: Baillière, Tindall & Cox. 3rd Edit. 21s. 2063

The third edition of this book is some 50 pages longer than the second edition. Much of this extra space is devoted to developments in barbiturate anaesthesia and to the use of beta - naphthoxyethanol (" anavenol ") in horses and cattle. Additions to the chapters on inhalation anaesthesia include a description of Longley's anaesthesia apparatus, the use of ethyl chloride and trichlorethylene in dogs and cats, and the use of cyclopropane in sheep. A new chapter deals with the positive pressure ventilation of the lungs during intra-thoracic surgery in small animals.—R.M.

Alexander, F. (1954). **Some observations on general anaesthesia in ponies.**—*J. comp. Path.* **64**, 20-25. [Abst. from author's summary.] 2064

Laparotomy was performed on 28 ponies under general anaesthesia, using sodium pentobarbitone; it appeared to be a safer anaesthetic for major surgical procedures than either intravenous chloral hydrate or the combination of sodium thiopentone intravenously followed by the inhalation of ether.

Dozza, G. (1953). Sull'uso di un apparecchio per la respirazione controllata nel cavallo. **[Closed circuit apparatus for artificial respiration in the horse.]**—*Atti Soc. ital. Sci. vet., Sanremo,* 1952. **6**, pp. 232-236. [English and French summaries.] 2065

To combat respiratory failure during experiments on the action of curare in the horse [Cella & Dozza, *V.B.* **24**, 577], D. devised a closed circuit apparatus for artificial respiration which consisted of an intratracheal tube connected to a soda lime container, a collapsible bag, and an oxygen cylinder.—R.M.

Mannheimer, W., Pizzalato, P. & Adriani, J. (1954). **Mode of action and effects on tissues of long-acting local anesthetics.**—*J. Amer. med. Ass.* **154**, 29-32. 2066

The authors investigated neuritis and local irritation in man and laboratory animals caused by the injection into and around nerves of a proprietary local anaesthetic containing procaine hydrochloride, butyl aminobenzoate, polyethylene glycol, and propylene glycol. They concluded that alcohol, phenol, polyethylene glycol, and the proprietary anaesthetic caused anaesthesia more by destruction of the nerve than by blocking of nervous impulses.—R.M.

Völker, R., Krause, D. & Ruhnau, D. (1953). Über die Wirkung zentraler Analeptica auf die Kreislaufregulation. **[Action of certain stimulants on the vasomotor centre of the dog and cat.]**—*Dtsch. tierärztl. Wschr.* **60**, 327-330. 2067

In anaesthetized animals leptazol was the most effective of the drugs tested in enhancing the tone of the pressor component of the vasomotor centre and in restoring blood pressure homoeostasis. Nikethamide and picrotoxin had a low therapeutic margin in this respect, and on occasions the former was inhibitory.

—G. P. MARSHALL.

See also abstr. **1746** (*V. fetus* infection); **1761-1764** and **1779** (*iso*-nicotinic acid hydrazide); **1767** (cortisone); **1770** (screening of anti-tuberculous agents); **1780** (Johne's disease); **1791** (erythromycin and carbomycin); **1793** (streptomycin); **1794** (effect of chemotherapeutics on *B. coli in vitro*); **1802** (international standardization of veterinary biological products); **1804** (antibiotics and arsenoxide); **1814** (mastitis in sheep); **1826** (dithiobiuret derivatives in trypanosomiasis); **1828** (Chagas' disease); **1829** (mapharsen); **1838** (sulphametazine); **1843** (aralen dihydrochloride); **1873-1874** (E.I.A.); **1878** (sulphamethazine in rinderpest); **1883** (penicillin in ovine pustular dermatitis); **1889** (chloramphenicol in distemper); **1905-1906** (fowl coryza); **1912** (disinfection against viruses); **1929-1931, 1934, 1936, 1939** and **1942** (insecticides); **1946, 1948, 1953-1954, 1956** and **1960** (anthelmintics); **1975-1976** and **2059** (antibiotics as food supplements); **2006-2007** (ketosis); **2013** (visceral gout); **2043-2044** (D.D.T.); **2045** (toxicity of pesticides to man); **2046** (insecticides and herbicides); **2090** (insect and rodent control); **2115** (progesterone).

PHYSIOLOGY, ANATOMY AND BIOCHEMISTRY

ANON. (1954). **Muscle proteins and muscle structure.**—*Lancet.* **266,** 35-36. 2068

A brief review of recent work on the biochemistry and physiology of muscles.—R.M.

GRZIMEK, B. (1952). Versuche über das Farbsehen von Pflanzenessern I. Das farbige Sehen (und die Sehschärfe) von Pferden. **[Colour vision and accuracy of vision in horses.]** — *Z. Tierpsychol.* **9,** 23-39. 2069

In order to test their colour vision, G. experimented with two horses which had been trained to associate certain colours with rewards in the form of titbits hidden in boxes marked with coloured paper squares 230 mm. × 275 mm. Any means of identification other than by colour were carefully eliminated. Identically shaped boxes were used.

Yellow was most readily recognized, then green, blue and finally red. Horses failed to pick out red if more than five boxes marked with grey were included in the experiment. As to intensity of colour a pale red was more easily recognized than an intensive shade of red, but an intensive blue more easily than a pale blue.

Acuteness of vision was tested by using coloured strips 5 mm. wide and 230 mm. long for marking boxes instead of coloured squares. The horses were able to see a vertical strip of yellow paper from a greater distance than a blue one, or, expressed technically, yellow was visible through a smaller visual angle than blue.

—E.G.

PEETERS, G. J. (1953). Moderne aspecten over de physiologie van de melkklier bij het rund. **[Modern views on the physiology of lactation in the cow.]** — *Vlaam. Diergeneesk. Tijdschr.* **22,** 229-261. [English, French and German summaries.] 2070

P. described the principles of the following techniques used to study lactation in the cow:—analysis of blood from mammary arteries and veins; respiration of slices of mammary gland; perfusion of the isolated udder; the use of radio-active isotopes. He also reviewed the literature on some physiological and biological aspects of lactation.—R.M.

OWEN, J. B. (1953). **Milk yield of hill ewes.** [Correspondence.]—*Nature, Lond.* **172,** 636-637. 2071

In preliminary tests on 32 Welsh mountain ewes, covering one season only in their normal environment, there was a high correlation between milk yield and both birth weight and growth rate of lambs. The mean daily yield was $31{\cdot}79 \pm 6{\cdot}04$ oz. as compared with 47 oz. for 8 pedigree ewes kept on the lowland for a shorter period.—C. C. BANNATYNE.

VERCAUTERN, R. (1953). **The properties of the isolated granules from blood eosinophiles.** —*Enzymologia.* **16,** 1-13. [In English; French summary.] 2072

The author attempted to isolate granules from eosinophile leucocytes by agitation, by lytic agents and by the action of cortisone; the second of these methods seems preferable if suitable lytic agents are used. A chemical analysis of the extracted granules suggests that they are surrounded by phospholipoproteins containing sphingosine; beneath these is a layer of eosinophile phospholipoids enclosing a gel-like body which has osmotic properties. A substance with anti-histamine properties was isolated from the granules.

—G. FULTON ROBERTS.

REYNOLDS, M. (1953). **Plasma and blood volume in the cow using the T-1824 hematocrit method.** — *Amer. J. Physiol.* **173,** 421-427. 2073

Studies of plasma and blood volumes using the T.1824 [Evans blue dye—the tetrasodium salt of 4,4′-*bis* 7-(1-amino-8-hydroxy-2,4′-disulpho) - naphthylazo - 3,3′ - bitolyl] dilution haematocrit method were made on healthy, non-lactating, non-pregnant Guernsey heifers

and cows over a period of some months. The average findings were:—plasma volume 36·9 ± 0·8 ml./kg.; haematocrit value 29·1 ± 1·0% cells, and blood volume 52·1 ± 1·4 ml./kg. Bovine plasma and blood volumes per unit are therefore significantly lower than those of rats, rabbits, dogs, sheep and man.—J. A. NICHOLSON.

HOENIG, W. & MOHR, W. (1953). Elektrokardiographische Studien beim Goldhamster, einem neuerdings viel verwendeten Laboratoriumstier. [**Electrocardiograph studies in the hamster.**]—*Z. Tropenmed. u. Parasit.* **4**, 117-121. [English summary.] 2074

A report on electrocardiography of 100 normal hamsters (6 weeks to 2 years old), with a description of the technique used, to establish standard tracings for future use. The electrocardiograms were relatively uniform and largely resembled those of normal human beings.—R. B. HOLCOMBE.

HEINEMANN, H. O., SMYTHE, C. M. & MARKS, P. A. (1953). **Effect of hemorrhage on estimated hepatic blood flow and renal blood flow in dogs.** — *Amer. J. Physiol.* **174**, 352-356. 2075

By means of cannulating the hepatic veins, the authors showed that loss of blood, equivalent to between 1·5% and 4% of body weight, in 9 dogs resulted in a fall of between 40% and 80% of hepatic and renal blood flow for a period of between 23 and 70 minutes.
—G. FULTON ROBERTS.

WYATT, J. P., BURKE, D. R. & HANLON, C. R. (1953). **Morphologic study of canine lungs after ligation of the pulmonary veins.**—*Amer. J. Path.* **29**, 291-303. 2076

After division of the left pulmonary veins in 8 dogs and of the right pulmonary veins in 17, clearance of the blood constituents in the affected lung occurred within 6 weeks and complete expansion of the lung within 12 months. Only an occasional linear scar and operative adhesions were then apparent. Six out of 9 dogs in the second group which were not treated with penicillin postoperatively, died within 3 days.—A. ACKROYD.

DAWES, G. S., MOTT, J. C., WIDDICOMBE, J. G. & WYATT, D. G. (1953). **Changes in the lungs of the new-born lamb.**—*J. Physiol.* **121**, 141-162. 2077

The lambs studied were delivered by caesarian section. Artificial positive pressure ventilation of the lungs using air, oxygen or nitrogen caused an immediate increase in the rate of the left pulmonary arterial blood flow owing to a great reduction of pulmonary vascular resistance. Expansion of the lungs with saline did not produce this effect.

Before ventilation, from 29 to 80% of the aortic blood was derived through the ductus arteriosus. Shortly after ventilation the blood flow through the ductus arteriosus was reversed. The ductus arteriosus was not observed to close during the experiments.—R. A. HUCK.

PAPPENHEIMER, J. R. (1953). **Passage of molecules through capillary walls.**—*Physiol. Rev.* **33**, 387-423. 2078

This review deals with a consideration of flow through porous membranes and with the application of the data and theories cited to capillary permeability. The deduction, well supported by 165 references, is made that water and lipoid-insoluble molecules pass through aqueous pores which form a small percentage of the surface area of the capillary walls. The effects of diffusion, hydrodynamic flow and molecular size are discussed in relation to this concept.—A. SEAMAN.

MOON, V. H. & TERSHAKOVEC, G. A. (1953). **Dynamics of inflammation and of repair. III. Effects of tissue extracts and of protein split products upon capillary permeability and upon leucocytes.** — *Arch. Path.* **55**, 384-392. 2079

A number of tissue derivatives, probably polypeptides, may cause increased capillary permeability, attracting leucocytes into areas of tissue injury and initiating the inflammatory reaction. Various protein derivatives elicit the same response as leucotaxine and it is suggested that the initial reactions of acute inflammation may not be due to one and the same chemical entity.—D. POYNTER.

CENNI, B. (1952). Studi comparativi sulla composizione delle ossa dei bovini a " groppa di cavallo " e bovini communi del Piemonte. [**Composition of the bones in " doppellender " calves.**]—*Ann. Fac. Med. vet., Pisa.* **5**, 36-60. [English and French summaries.] 2080

Substantial differences exist between the bones of normal calves and of " doppellender " calves [calves in which there is muscular hypertrophy of the loins and thighs—see also *V.B.* **24**, 626 & 627]. In normal calves the specific weight and the resistance to pressure are higher than in the latter, the amount of residual ash, of calcium and phosphate are also greater. These differences are probably due to the effect of conditions relating to rapid growth on the formation of bone.—I. MARTINI.

Dobriner, K., Katzenellenbogen, E. R. & Schneider, R. (1954). **Steroids from hog adrenal glands.**—*Arch. Biochem.* **48**, 167-171. [Authors' summary slightly modified.] **2081**

From an extract of adrenal tissue prepared from glands frozen with solid carbon dioxide as soon as practicable after removal from pigs, the following steroids were isolated: hydrocortisone, cortisone, corticosterone, 11-dehydrocorticosterone and 11-desoxycortisone. The authors made a tentative identification of four other compounds present in trace amount.

Halpern, B. N., Benacerraf, B. & Biozzi, G. (1953). **Quantitative study of the granulopectic activity of the reticulo-endothelial system. I. The effect of the ingredients present in India ink and of substances affecting blood clotting *in vivo* on the fate of carbon particles administered intravenously in rats, mice and rabbits.**—*Brit. J. exp. Path.* **34**, 426-440. **2082**

Using rats, mice and rabbits the authors showed that small concentrations of injected Indian ink disappear exponentially from the blood and accumulate in the liver and spleen; higher concentrations of Indian ink disappear more slowly and accumulate first in the lungs. They believed that the latter could be explained by a micro-coagulation of fibrin *in vivo* caused by the shellac in the Indian ink and supported this theory by studying the effect of injections of thrombin, thromboplastin and anticoagulants on the rate of disappearance and the distribution of injected Indian ink.—G. Fulton Roberts.

I. Menkin, V. (1953). **The significance of the accumulation of cortisone in an inflamed area.**—*Brit. J. exp. Path.* **34**, 412-419. **2083**

II. Menkin, V. (1953). **On the localization of corticotropin (ACTH) in an inflamed area.**—*Ibid.* 420-425. **2084**

I. Cortisone injected intravenously enters acute inflammatory foci and appears in exudates. It suppresses inflammation by inhibiting the effect of leucotaxine on capillary permeability. Its value in eye infections and rheumatoid arthritis is thus explained.

II. A.C.T.H. injected intravascularly enters inflammatory foci, and partially inhibits leucocyte diapedesis. It suppresses increased capillary permeability. Beneficial clinical effects are thus explained. It exerts a toxic action on, and interferes with, cleavage of sea-urchin ova.
—F. R. Harris.

Granick, S., Bogorad, L. & Jaffe, H. (1953). **Hematoporphyrin IX, a probable precursor of protoporphyrin in the biosynthetic chain of heme and chlorophyll.**—*J. biol. Chem.* **202**, 801-813. **2085**

Separation and purification of haematoporphyrin from the pigments of a mutant W_5B17 of a species of *Chlorella* (a fresh-water alga) was effected by counter-current distribution and chromatography.

The dimethyl ester of this preparation is identical with the synthetic ester in absorption spectrum, melting point, C, H and N analyses and R_F values. The tetramethyl derivative is also identical with the synthetic compound in R_F values and melting point.

Haematoporphyrin is suggested as the precursor of *Chlorella* protoporphyrin.
—A. Seaman.

Bourne, G. H. & Danielli, J. F. [Edited by.] (1952). **International review of cytology. Vol. I.** pp. 368. New York: Academic Press Inc. $7.80. **2086**

This volume represents the first of an annual review of the published papers in cytology, each chapter being contributed by an acknowledged expert in the branch of cytochemistry under review. The work dealt with in this first volume is not intended to cover the the whole field, but the aim is to cover the literature of the subject generally in the course of its issues. Bearing this factor in mind the book is reasonably well-balanced.

The following chapters are likely to be of most interest:—the application of freezing and drying techniques, enzymatic processes in cell membrane penetration, the cytology of mammalian epidermis and sebaceous glands, electron microscope techniques, and factors which control the staining of tissue sections. One very small and interesting chapter on the behaviour of spermatozoa in the neighbourhood of eggs throws doubt on whether chemotaxis, at any rate in the case of sea urchin gametes, is likely to make the " kinetic " approach to fertilization seriously in error.

This book fulfils the usual high standard of printing and binding one expects from the publishers.—D. S. Papworth.

See also abstr. **1973** (physiology of digestion in pigs); **2014** (book, biochemistry of disease); **2151** (annual review of physiology); **2153** (Ciba Foundation colloquia on endocrinology); **2154** (Proceedings of the Laurentian Hormone Conference); **2153** (annual review of biochemistry); **2156** (isotopic tracers in biochemistry and physiology).

PUBLIC HEALTH, VETERINARY SERVICES AND VETERINARY EDUCATION

HOWES, J. R. (1953). **A taint in cows' milk caused by the grazing of *Ischaemum aristatum* L.**—*Trop. Agric., Trinidad.* **30,** 224-227. [Abst. from author's summary.] 2087

H. reported a taint in milk accompanied by a bad odour caused by grazing on a pure stand of the Trinidad strain of *I. aristatum.* In tropical areas where this grass is grown, the effect on the flavour of milk of the particular strain grown should be observed. No further plantings of the Trinidad strain for dairy cattle should be made and existing pastures should be used only by beef and dry or growing dairy stock. The closely related species, *I. timorense* (Kunth), C. E. Hubbard, known in British Guiana as " Lucuntu " grass, might be tried as an alternative.

JØRGENSEN, A. (1951). Om syrningsvanskeligheder, specielt med henblik på virkningen af penicillinholdig maelk. **[Difficulties, caused by the presence of penicillin, in the souring of milk for butter and cheese production.]**—*Nord. VetMed.* **3,** 203-246. [In Danish. English and German summaries.] 2088

J. studied the influence of penicillin on processes of fermentation employed for butter and cheese production. After 50,000 I.U. of sodium penicillin G in an oily vehicle with the addition of aluminium monostearate had been introduced into the teat, penicillin was demonstrable in the milk for 60–80 hours; after a dose of 100,000 I.U., it was demonstrable up to 96 hours. Potassium penicillin G in saline, potassium penicillin G in wax, and a mixture of potassium and procaine penicillin G in saline were all eliminated more rapidly from the milk, often in less than 36 hours, or, at the latest, 48 hours regardless of dosage. Milk from cows so treated could be used for butter production, by adding to each 150 l., 30% of cream from untreated cows. Such butter obtained a grading slightly lower than control samples, but was of average quality.

ANDERSON, A. W. (1954). **The siting, construction and management of modern abattoirs.**—*J.R. sanit. Inst.* **74,** 22-29. [Abst. from author's summary.] 2089

The author emphasized the desirability of careful investigation in consultation with local interests before deciding on a site for a modern abattoir and on the nature of the facilities to be provided. He made suggestions on how to assess the extent of the facilities required. He drew a sharp contrast between planning for " line " as opposed to " booth " dressing, and emphasized the importance of adequate cooling facilities for carcasses and offals. He emphasized the distinction between administrative management and management of slaughtering and dressing operations, and drew attention to the repercussion single as opposed to multiple control of operations may have on planning.

WILEY, J. S. & STEPHENS, P. A. (1953). **Insect and rodent control in epidemics and disasters.**—*Publ. Hlth Rep., Wash.* **68,** 334-337. 2090

A note emphasizing the importance of insect and rodent control, where necessary, in rehabilitation work after floods and other disasters which disrupt the normal life of a community. D.D.T. spraying on interior surfaces to control mosquito-borne diseases, the use of D.D.T. dust and poison to control rodent-borne diseases and the disposal of damaged meat in fly-proof pits were recommended.—BERYL A. KAY.

RUST, J. H. & TRUM, B. F. (1953). **Civil defense problems confronting the veterinarian in an atomic age.** — *Vet. Med.* **48,** 106-110. 2091

The authors discussed the role of the veterinarian in the possible event of atomic warfare, and in connexion with peace-time dangers arising from the use of nuclear energy, with special reference to food animals and package foods from the public health standpoint. They gave tables referring to the effects of high air blast, low air blast and underground and underwater blast.—D. S. RABAGLIATI.

I. RAMON, G. (1953). Rapport technique du Directeur de l'Office international des Epizooties pour l'exercice 1952-1953. **[Report of the Director, Office International des Epizooties for 1952-53.]**—*Bull. Off. Int. Epiz.* **40,** May. pp. 5-23. [English conclusions.] 2092

II. RAMON, G. (1953). Programme de travail et d'action de l'Office international des Epizooties pour les temps à venir. **[Future programme of the Office International des Epizooties.]**—*Ibid.* pp. 24-32. 2093

I. A report on the work achieved in 1952-53 by the operation of the " circular information system " of the O.I.E., together with an appeal for more co-operation from those member countries who fail to notify diseases. The diseases dealt with were F. & M. disease, rabies, TB. in cattle, brucellosis, bovine contagious pleuro-pneumonia, rinderpest, swine fever, fowl plague and Newcastle disease, rickettsial infections including Q fever, leptospirosis, scrapie and psittacosis. The import-

ance of co-ordination of research was emphasized.

II. R. discussed in detail the aims, present and future, of the O.I.E. with emphasis on further development of the " circular information system ", bilingual publication of the most important articles, co-ordination of research and the endowment of grants, and the appointment of panels of specialists to study various disease problems. He made an urgent appeal for further financial support from the member countries as expenditure in 1952-53 had exceeded receipts by more than five million francs.

—J.D.

DO VALE, J. M. (1952). História da Sociedade Portuguesa de Medicina Veterinária. **[History of the Portuguese Society of Veterinary Medicine.]**—*Rev. Med. vet., Lisboa.* **47**, 215-441. **2094**

The author gave a detailed and well documented account of the history of the Portuguese Society of Veterinary Medicine during the 5 decades since its foundation in 1902 and discussed its influence in the profession. He gave a complete list of all the articles which have been published in the Society's journals.

—F. A. ESTEVES.

See also absts. **1766** (pasteurization of milk); **1802** (international standardization of biological products); **1803** (Public Health aspect of brucellosis); **1813** (milk as a carrier of anaerobic infections); **2017** (diseases of animals transmissible to man in Alaska); **2945** (toxicity to man of some pesticides); **2141** (report, Canada); **2157** (German animal diseases legislation).

LIVESTOCK HYGIENE

ANON. (1953). **The housing of pigs.**—*Bull. Minist. Agric., Lond.* No. 160. pp. 63. London: H.M. Stat. Off. 3s. **2095**

This bulletin begins by giving the basic considerations for the housing of pigs, followed by reasons for choice of housing system and then goes into more detail of construction and layout of the various systems.—R. A. HUCK.

SWAHN, O. & OLOFSSON, N. E. (1952). Desinfektionslampors inverkan på hälsotillstånd och tillväxt i gödsvinsbesättningar. **[Effect of ultra-violet light on the health and growth of store pigs.]** — *Nord VetMed.* **4**, 313-331. [In Swedish. English and German summaries.] **2096**

The health of store pigs raised in buildings fitted with ultra-violet lamps was found to be superior to that of equal numbers of litter mates raised in buildings without such lamps. There was a significant reduction in deaths from pneumonia, both acute and chronic lesions tending to be less extensive in treated than in untreated groups. Food consumption was slightly smaller in the former groups, but there was no difference in back-fat grading nor in the condition of the ribs at P.M. examination.

—F. R. HARRIS.

KAY, L. A., WARD, W. M. & HENDIN, I. D. (1953). **Nitrates in Manitoba water supplies.** —*Canad. J. publ. Hlth.* **44**, 95-101. **2097**

Facilities for the early detection of a high nitrate content in water supplies have been established in Manitoba. Removal of nitrates is too technical a procedure for the average household; substitution of a more suitable water supply is recommended.

—THOMAS MOORE.

REPRODUCTION AND REPRODUCTIVE DISORDERS

ULLNER, W. (1953). Beziehungen zwischen spezifischem Gewicht, Dichte und Eiweissgehalt im Bullensperma. **[Specific gravity, opacity and protein content of bovine semen.]** —*Tierärztl. Umsch.* **8**, 196-197. **2098**

Determinations were made on samples of bull semen of the specific gravity of the sperm and sperm plasma by the copper sulphate method, the protein content of the sperm and sperm plasma by the biuret method and of the number of spermatozoa per cu. mm. Curves were then constructed whereby knowing any two of these values the other three may be read off, thus providing a quick and reliable method for evaluation of ejaculates.—J. A. NICHOLSON.

FIŠER, J. (1952). Sniženje pH kao pomoćni metod određivanja kvaliteta sperme. **[Observations on pH in the evaluation of semen.]** —*Vet. Glasn.* **6**, 585-588. [In Croat. Abst. from English summary.] **2099**

F. observed the decrease of pH in bull and ram semen maintained at 30°C. In bull semen of good quality there was a decrease in pH value of 0·4 after 30 min.; in ram semen of similar quality the same change took place in 15 min.

In inferior semen from both species there was little or no decrease in pH under the same conditions.—A.S.

I. Rottensten, K. (1951). Forsøg med fortyndingsvaedsker. **[Use of a semen diluent containing sulphanilamide.]** — *Beretn. Forsøgslab. Kbh.* No. 253. pp. 1-14. [English summary.] 2100

II. Rottensten, K. & Wibling, H. (1951). Sammenligning mellem flydende og gelatineret fortyndingsvaedske. **[Comparison of liquid and gelatinized bull semen.]**—*Ibid.* pp. 15-23. [English summary.] 2101

I. Comparative trials at two artificial insemination centres, using on alternate days semen diluted (a) with a diluent described by Milovanov and (b) with a citrate-glucose-sulphanilamide (0·3%) diluent showed an increase in conception rate to first insemination of 1·7 ± 1·22% and of 2·9 ± 1·26% to second and later inseminations with an overall increase for all inseminations of 2·4 ± 0·83% when the sulphanilamide diluent was used.

II. In comparative trials with bull semen diluted with (a) citrate-glucose-sulphanilamide with 20% egg yolk and (b) the same diluent with 3·9% gelatin, a slightly better conception rate was obtained with the liquid than with the gelatinized semen. The authors discussed the advantages and disadvantages of the two methods.—F.E.W.

Adler, H. C. & Rasbech, N. O. (1953). Undersøgelser over antibiotikas virkning på tyresaeds fertilitet. III. Sammenligning mellem 1000 og 5000 μg dihydrostreptomycin-sulfat/ml saedfortynder.—Med saerligt henblik på anvendelse til saed af *Vibrio fetus*-smittespredende tyre. **[The effect of antibiotics on fertility of bull semen. III. Comparison between 1000 and 5000 μg. dihydrostreptomycin sulphate per ml. of diluent. The use of semen from bulls transmitting *V. fetus* infection.]** —*Nord. VetMed.* **5,** 211-220. [In Danish. English and German summaries.] 2102

The trials were based on 10,257 first inseminations using 900 ejaculates from 51 bulls. The split sample technique was used, one sample containing 1,000 μg. dihydrostreptomycin sulphate per ml. diluent and the other 5,000 μg. which was added directly after collection. Insemination was mostly with semen less than 12 hours old. The conception rate, given as 60- to 90-day non-returns, with 5,000 μg. was slightly but significantly better, both with highly fertile bulls and with those of low fertility. In the case of 19 known carriers of *V. fetus* the improvement was marked.

—H. Boyd.

Blackshaw, A. W. & Emmens, C. W. (1953). **Survival of deep-frozen mammalian spermatozoa.** [Correspondence.] — *Vet. Rec.* **65,** 872. 2103

Working primarily with sheep spermatozoa the authors recommended that semen be diluted with 50% egg yolk citrate buffer before cooling. Semen so diluted may be further diluted by adding glycerol and arabinose when the temperature is 15°C. and under, without harmful results, as judged by revival on thawing. A method evolved by them in 1950 using 7·5% vol./vol. glycerol and 1·25% wt./vol. arabinose per ejaculate gives a fully fertile bull semen after freezing to −79°C.—Ian Newsam.

Rasbech, N. O. (1953). Udtagning af forhudsprøver til bakteriologisk undersøgelse. **[Collection of preputial samples for bacteriological examination.]**—*Nord. VetMed.* **5,** 1002-1006. [In Danish. English and German summaries.] 2104

R. described and illustrated an apparatus for collecting preputial samples, employing a transfusion flask containing peptone broth or saline at 37°C. which is massaged into the prepuce for 5–6 min. The method has given good results.—R. B. Holcombe.

Wiggins, E. L. & Terrill, C. E. (1953). **Variation in penis development in ram lambs.**—*J. Anim. Sci.* **12,** 524-535. 2105

Development of the penis was slower in lambs from older ewes than in those from ewes 2 and 3 years old. Penile development of twins was slower than that of single lambs. Testicular hormone influences the speed of development.—G. B. S. Heath.

Sniffen, R. C. (1952). **Histology of the normal and abnormal testis at puberty.**—*Ann. N.Y. Acad. Sci.* **55,** 609-618. 2106

S. described the histology of the testicle at the age of puberty in normal human beings and in cases of cryptorchidism, eunuchoidism, sclerosis of the semiferous tubules, muscular dystrophy, and chronic systemic illness.—R.M.

Tayeb, M.-A.-F. (1953). Les organes génitaux de la chamelle. **[The female genital system of the camel.]**—*Rev. Élev.* **6,** 17-21. 2107

The whole system is smaller than that of the cow, and the placenta is diffuse. The left horn is the more frequently functional, and the cervix is flabby, the canal two fingers wide.

—F. L. M. Dawson.

Foley, R. C. & Reece, R. P. (1953). **Histological studies of the bovine uterus, placenta,**

and corpus luteum.—*Bull. Mass. agric. Exp. Sta.* No. 468. pp. 62. 2108

The authors presented information on the histology and histochemistry of the bovine uterus, placenta and corpus luteum. They cited 73 references and reviewed the literature. The experimental animals included 32 heifers and 11 dairy cows, all of which were slaughtered at known intervals after service. Tissue samples were taken from the endometrium and from the chorion; and the weights and measurements of the embryos were recorded. The tissues were subjected to routine histological investigation, and were also examined for the presence and distribution of alkaline phosphatase, neutral fats and free cholesterol. Data on the breeding efficiency of the experimental animals were included.—G. Gall.

Penavin, V. & Šimunić, B. (1953). Nezgode i štete koje mogu nastati prilikom pregleda i liječenja neplodnosti, te umjetnog osjemenkavanja krava i kobila. **[Damage to the genital organs of cows and mares which may result from clinical examination, sterility treatment and artificial insemination.]**—*Vet. Glasn.* **7,** 37-42. [In Croat.] 2109

The authors emphasized the necessity of an early diagnosis of pregnancy before attempting to treat a " sterile " cow. They discussed accidents due to the perforation of the rectum, cervix, or uterus and recommended a course of penicillin injections in such cases, in order to prevent the development of peritonitis.

They also mentioned the danger of local infection following artificial insemination of cattle.—I. Martini.

Thiéry, G. (1953). Le frottis vaginal chez quelques femelles domestiques. **[Characteristics of normal and abnormal vaginal smears in the mare, cow, sow, bitch and cat.]**—*Rec. Méd. vét.* 129, 941-961. 2110

T. described the collection, staining and examining vaginal smears, the microscopic appearance of smears from the normal mare, cow, sow, bitch and cat, and abnormalities encountered in hormonal disturbances, inflammation and neoplasms of the genital tract, and leucosis.—R.M.

Carminati, G. M. (1953). Le gravidanze extrauterine nei mammiferi. Tentativi di riproduzione sperimentale. **[Ectopic pregnancy in mammals.]**—*Arch. Vet. Ital.* **4,** 289-298. [English, French and Spanish summaries.] 2111

Attempts were made to produce experimentally, primitive abdominal pregnancy, secondary abdominal pregnancy, tubal pregnancy, and secondary utero-abdominal pregnancy. About 10 rabbits were used in each group, and also in the third group, 9 rats. Embryos denied entry to the tube *ab initio* soon degenerated, and no attempt to produce tubal pregnancy (by ligation in the isthmus region) succeeded. An embryo transferred to the abdomen from the uterus at the 16th day of gestation continued development until about double its size at transfer. C. considered the largely negative results to have ensued from the type of placentation in the species under experiment.—F. L M. Dawson.

Vandeplassche, M., Ide, M., Vanheuverswijn, A., Paredis, F. & Sierens, G. (1953). Is foetotomie bij dystokie van runderen nog aktueel? **[Results following embryotomy in bovine dystocia.]**—*Vlaam. Tijdschr. Diergeneesk.* **22,** 189-201. [In Dutch. English, French and German summaries.] 2112

In 239 cases of dystocia in cattle in which embryotomy was performed, delivery was impossible in only 2%. In 6% the cow subsequently died, and in 13% retention of the placenta resulted; 73% conceived again within 6 months and 82% within 10 months. The authors compared these results with those obtained in 115 caesarian sections [see also *V.B.* **24,** 963].—C. A. van Dorssen.

McCullagh, E. P. & Schaffenburg, C. A. (1952). **The role of the seminiferous tubules in the production of hormones.**—*Ann. N.Y. Acad. Sci.* **55,** 674-684. 2113

The authors reviewed the literature on the production of sex hormones by the seminiferous tubules, and referred to their own experiments on the presence of androgens in human and bovine semen.—R.M.

Carda Aparici, P. & Pérez Pérez, F. (1952). Nota sobre la acción comparada de las gonadotrofinas sérica y corionica en el ovario de oveja merina en anestro. **[Action of serum gonadotrophin and chorionic gonadotrophin on the ovary of the anoestrous ewe.]**—*An. Fac. Vet. Madrid.* **4,** 236-242. [English, French and German summaries.] 2114

Gonadotrophins are more effective when given i/v in the sheep, than i/m. Chorionic gonadotrophin is more effective than serum gonadotrophin in the treatment of persistent corpus luteum. A dosage of 150 I.U. of chorionic gonadotrophin given i/v provoked an intense reaction in the ovary but was not sufficient to stimulate rupture of the follicle.

—I. W. Jennings.

GRANDCHAMP, G. (1953). Rôle de la progésterone dans la thérapeutique des kystes du follicule de Graaf chez la vache. [**Treatment of ovarian cysts in cattle with progesterone.**] —*Schweiz. Arch. Tierheilk.* **95**, 672-687. [In French. English, German and Italian summaries.] 2115

G., a practising veterinary surgeon, associated cystic ovarian disease with excess of nitrates applied to the soil, precipitating hormonal imbalance. He gave a lengthy theoretical account of hormonal control and bovine genital physiology. He stated that he had found no references in the literature to experimental cystic follicle production by F.S.H. administration. The bibliography lists 23 references, mainly French general textbooks rather than research articles.

Eleven cases showing large ovarian cysts, uterine discharge, and slack pelvic ligaments were treated with 225–300 mg. progesterone, and 4 conceived within the first 3 services, 3 others showed clinical improvement and a tendency to return to a normal cycle, the remaining 4 cases, those of the longest standing, showing no lasting effect. The action of the hormone, which was given i/m or s/c, is considered to be a direct neutralization of cyst oestrogen.

—F. L. M. DAWSON.

BUDY, A. M., URIST, M. R. & MCLEAN, F. C. (1952). **The effect of estrogens on the growth apparatus of the bones of immature rats.**—*Amer. J. Path.* **28**, 1143-1167. 2116

Oestradiol benzoate, ethinyl oestradiol, diethylstilboestrol and 3-methyl *bis*dehydrodoisynolic acid interfered with the resorption of the spongy bone in the metaphysis, the maximum effect being obtained when injections were made into animals 30 days old. Normal growth of the bone was eventually restored after cessation of treatment. Testosterone propionate did not produce consistent reactions.

—A. SEAMAN.

ZARROW, M. X., LAZO-WASEM, E. A. & SHOGER, R. L. (1953). **Estrogenic activity in a commercial animal ration.**—*Science.* **118**, 650-651. 2117

A commercial ration for mice was found to contain enough oestrogen (probably synthetic) to prevent atrophy of the uterus in spayed mice. The authors suggested that either animal or plant material incorporated in the ration could have provided a source of oestrogen and pointed to the importance of this as a potential invalidating factor in oestrogen assays.—G. P. MARSHALL.

ADAMS, C. E. (1953). **Inhibition of superovulation in the rabbit.** [Correspondence.]—*Nature, Lond.* **172**, 82. 2118

The author stated that s/c injections of a horse pituitary extract induced superovulation in young rabbits, but in other rabbits given plasma from these treated ones the response to the treatment was inhibited.—E. A. GIBSON.

GRIMM, H., JR. (1953). Gynäkologische Untersuchungsbefunde und Fruchtbarkeit bei der Rinderbesamung. [**Relationships between the state of the genital organs and fertility in cattle.**]—*Fortpfl. Besamung Haustiere.* **3**, 99-101. 2119

Of 670 cows presented for insemination, 24 had catarrhal endometritis and 8 pyometra. Further work involving a total of 4,000 animals was based on a subjective classification of follicle size into three groups. It was found that the conception rate was 30% to first insemination with the smallest size follicles and 70% with the largest. A somewhat similar relationship was established regarding the intensity of oestrous symptoms in the vagina.

—F. L. M. DAWSON.

VAN RENSBURG, S. W. J. & VAN HEERDEN, J. S. (1953). **Infertility in mares caused by ovarian dysfunction.**—*Onderstepoort J. vet. Res.* **26**, 285-313. [Authors' abst.] 2120

Ovarian activity was studied by rectal palpation of the ovaries of 24 mares during 52 oestrous cycles in two breeding seasons. Only 27 of the 52 oestrous periods ended in ovulation. In 23 follicles developed and then regressed instead of ovulating, and in two oestrus was shown with follicular development.

It is concluded that anovulatory oestrus is one of the most serious breeding problems of equines.

Two cases in which oestrus was shown continuously for 119 and 171 days respectively are recorded. The latter ended in ovulation and pregnancy.

In the majority of cases ovulation occurs within the last 48 hours of oestrus but heat may persist for four or five days after ovulation.

Two cases in which oestrus was shown during early pregnancy and terminated in ovulation are recorded.

Treatment with stilboestrol and chorionic gonadotrophin was applied to 17 mares with irregular sexual cycles. This produced ovulation in ten mares, and nine of them conceived.

In another experiment 24 shy breeders were turned out to run with two stallions in

two different camps. Within two months 21 of these mares had conceived. This high conception rate is attributed to psychological factors.

NYBORG, R. G. (1953). Ovulationsuregelmaessigheder og et uheldigt valgt bedaeknings- og afprøvningssystem som årsag til ufrugtbarhed hos hopper. **[Ovulation irregularities, service periods and infertility in mares.]**—*Nord. VetMed.* **5,** 473-538. [In Danish. English and German summaries.] **2121**

N. recorded the results of random clinical examination of 94 Belgian mares during 85 days of a breeding season. Significant irregularities in ovulation were seldom encountered. There was a progressive decrease in cyclical sexual function during the last part of the breeding season, presumably a breed characteristic, and this, in combination with a misleading checking system at oestrus and infrequent service, appeared to be the chief cause of infertility. He outlined a system for checking oestrus in the mare. There are 3 figures and 17 tables.—R. B. HOLCOMBE.

ANON. (1952). Comité voor steriliteitsbestrijding. Verslag over het werkjaar 1951. **[Report of the Belgian Committee for Control of Sterility for the year 1951.]**—*Vlaam. diergeneesk. Tijdschr.* **21,** 36-48. [English summary.] **2122**

Trichomonas infection was cured in 27 bulls by irrigating the prepuce with 1 : 1000 trypaflavine solution followed by massage with " bovoflavin " (an ointment containing an acridine base and a compound of urea and quinoline). Over 200 cases of nymphomania and 334 cases of anoestrus in cattle were studied. Degeneration of the seminal epithelium proved to be an important cause of sterility in bulls. Failure to ejaculate was a common and serious cause of sterility in the Belgian draught horse.—C. A. VAN DORSSEN.

ANON. (1953). Comité voor steriliteitsbestrijding. Verslag over het werkjaar 1952. **[Report of the Belgian Comimttee for Control of Sterility, for the year 1952.]**—*Vlaam. diergeneesk. Tijdschr.* **22,** 32-34. [English summary.] **2123**

Cattle with anatomical abnormalities of the genital tract that failed to conceive after natural service became pregnant after artificial insemination. Difficulties in *Vibrio fetus* agglutination with vaginal mucus were attributed to antigenic differences. Application of " bovoflavin " ointment to the vulva immediately before service did not protect cows against *Trichomonas foetus* infection.

An unusual cause of sterility was treatment by laymen with solutions of ferric chloride or potassium permanganate immediately before natural service.

Percentages of conception rate were given but separate figures for natural and artificial insemination were not included.

—C. A. VAN DORSSEN.

BEHRENS, H. (1953). Occipitalpunktion und Liquoruntersuchung bei einem Pferd mit einem primären, chronischen erworbenen Hydrocephalus internus. **[Examination of cerebrospinal fluid in primary chronic congenital hydrocephalus in a horse.]**—*Dtsch. tierärztl. Wschr.* **60,** 489-491. **2124**

Examination of c.s.f. from a horse affected with congenital hydrocephalus revealed that the cause was obstruction to the circulation of the fluid between the brain and the spinal cord.

SUGAWA, Y., MOCHIZUKI, H. & TSUBAHARA, H. (1951). **[Studies on the hydrocephalus of calves.]**—*23rd Rep. Govt. exp. Sta. Anim. Hyg., Tokyo.* 2nd report on Japanese equine encephalitis. pp. 187-196. In Japanese. English summary pp. 197-202. **2125**

In 5 cases of hydrocephalus in calves the authors failed to isolate a virus or a bacterial agent. The glucose content of the cerebral and spinal fluids differed widely. In 3 the lesions were classified as hydrocephalus which had occurred during the embryonic stage; in the other 2 non-purulent encephalitis had occurred after the complete development of the brain.

—KOGI SAITO.

NES, N. (1953). Arvelig muskelkontraktur hos dølefe. **[Hereditary muscle contraction in cattle in Norway.]**—*Nord. VetMed.* **5,** 869-883. [In Norwegian. English and German summaries.] **2126**

A report on 17 full-term, non-viable calves with muscle contraction and other defects from one Norwegian breed. There was usually marked flexion of the fore-limbs, and bending backwards of the hind limbs at the hocks, so that the hooves pointed towards the anus and were fused to the vulva or to a very malformed penis. There were also head deformities, and the coat was short and frizzed. All the calves were descended from 4 bulls, which had a common ancestor and it is considered that the defects are hereditary, being due to a single, recessive, autosomal gene.—R. B. HOLCOMBE.

See also absts. **1846** (F. & M. disease and fertility); **2143** (report, Netherlands); **2158** (book, reproductive disorders in domestic animals).

ZOOTECHNY

DRACY, A. E., GRAHAM, E. F. & HIRSCH, M. (1953). **Some similarities of monozygotic cattle noseprints.** — *J. Dairy Sci.* **36,** 11-13. 2127

A study of the nose-prints of 31 pairs of twin calves believed to be monozygotic revealed a similarity of general pattern in 27 of the pairs, and the presence up to 3 similar secondary characteristics in 22.—G. V. LAUGIER.

HANCOCK, J. (1953). **Studies in monozygotic cattle twins. X. General summary.**—*N. Z. J. Sci. Tech.* Sect. A. **35,** 189-198. [Author's summary modified.] 2128

H. outlined the recent literature on cattle twins and discussed it in relation to the results presented in the previous papers of this series [*V.B.* **21,** 1201 & 2173; **22,** 1899; & **24,** 293].

DAYUS, C. V. (1953). **Animal production, and some related problems, in Southland.**—*N. Z. vet. J.* **1,** 87-92. 2129

An account of sheep husbandry in Southland, New Zealand. D. emphasized the importance of maintaining an adequate diet throughout the winter and suggested methods of doing so.—G. B. S. HEATH.

SIMPSON, G. G. (1951). **Horses. The story of the horse family in the modern world and through sixty million years of history.** pp. xvi+247. New York: Oxford University Press Inc. 40s. 2130

This profusely illustrated account of the horse which is intended for the general reader consists of three main parts, dealing with the horse in its present form, its ancestry and its evolution respectively. There is an appendix consisting of a select list of literature on the horse for the general reader. Paper, print, photographs and line drawings are of very good quality and the binding is very pleasing.—E.G.

ANON. (1954). **Society and self.**—*Lancet.* **266,** 37. 2131

Comments on the report of the conference on interrelations between the social environment and psychiatric disorders organised by the Milbank Memorial Fund, U.S.A. Some aspects of the social behaviour of animals are mentioned. —R.M.

TECHNIQUE AND APPARATUS

COWAN, S. T. (1953). **The maintenance of stock cultures of bacteria.**—*Lab. Pract.* **2,** 641-643. [Abst. from author's summary.] 2132

The Curator of the National Collection of Type Cultures gave brief rulings on the subject. Bacteria are best preserved in the dried state. He described the correct method of opening ampoules containing dried culture so as to obviate the risk of accidental infection. He gave details of the intervals between subculture, and the media required for stock cultures kept on nutrient media.

BERG, J. W. (1953). **New method for staining mycobacteria in tissue sections.**—*Arch. Path. (Lab. Med.)* **56,** 650-652. [Author's summary copied *verbatim*.] 2133

Since the use of a counterstain reduces the sensitivity of the acid-fast reaction, it was considered desirable to obtain high contrast between acid-fast bacilli and non-acid-fast background tissue in some other manner. This was accomplished by using a reducing acid, formic acid, in the differentiating acid-alcohol solution. Rapid staining at room temperature was achieved by making the carbol-fuchsin solution alkaline. The results were affected by the type of fixation; alcohol-fixed tissue gave better results than did tissues fixed in formalin or Helly's solution.

BAILENGER, J. & NEUZIL, E. (1953). Nouvelles techniques d'examen des helminthes: fixation; coloration; montage. [**New techniques for the study of helminths; fixation, staining and mounting.**]—*Ann. Parasit. hum. comp.* **28,** 392-398. 2134

The helminths are fixed in a position of relaxation by menthol, stained with Chlorazol Black E and mounted in sodium alginate with glycerol. Photographs of good results obtained were reproduced.—D. POYNTER.

EARL, C. J. (1954). **Screening test for excessive urinary copper.**—*Lancet.* **266,** 234-235. [Abst. from author's summary.] 2135

An account of a rapid screening procedure for estimation of increase in copper excretion in the urine, based on the method described by Eden and Green (1940), omitting the tedious ashing process.

FALES, F. W. (1953). **A micromethod for the determination of serum calcium.**—*J. biol.*

Chem. **204,** 577-585. [Author's summary modified.] 2136

The calcium content of 0·1 ml. of serum is determined by direct titration with standard disodium dihydrogen ethylenediaminetetraacetate with ammonium purpurate as the indicator. The end-point is determined graphically from spectrophotometric readings taken during the titration. The titration can be carried out in a few minutes with considerable precision. The method is also applicable for the macrodetermination of serum calcium.

WHITE, C. (1953). **Sampling in medical research.**—*Brit. med. J.* Dec. 12th, 1284-1288. 2137

' Samples ' may be " good or bad, fair or biased, representative or misleading, and . . . all sampling entails, therefore, a sampling error ". This article is a general consideration of the sampling problem, including, with illustrative examples, random sampling, probability sampling and the danger of bias.

—C. A. E. BRIGGS.

See also abst. **1770** (screening of antituberculous agents).

MISCELLANEOUS

DOBBERSTEIN, J. (1953). Die Obduktion in der forensischen Veterinärmedizin. [**Autopsy in forensic veterinary medicine.**] — *Schweiz. Arch. Tierheilk.* **95,** 510-517. 2138

Brief notes for practising veterinarians on performing autopsies on cases in which there may be legal action.—R. B. HOLCOMBE.

ROE, F. G. (1951). **The North American buffalo. A critical study of the species in its wild state.** pp. viii + 957. Toronto: University of Toronto Press. London: Oxford University Press. $12.00. 96s. 2139

This is a voluminous monograph on the bison, describing its history, habitat, migration routes, numbers, varieties, foes and its role in the life and mythology of the North-American Indian etc.

There is a wealth of information contained in the 22 chapters and 34 appendixes of this work. There are also innumerable quotations from original sources, references and footnotes on nearly every page.

In Appendix J. of the work the author quotes a newspaper extract, stating that haemorrhagic septicaemia may have been one of the causes of near-extermination of bison. Other diseases which appear to have been common in bison were mange and renal calculi.

There is a list of about 1000 references and an alphabetical index. Paper and print are very good and the book is nicely bound.—E.G.

REPORTS

GREAT BRITAIN. (1951). Department of Agriculture for Scotland. Hill farm research. **Report of the Scottish Hill Farm Research Committee.** pp. 134. Edinburgh: H.M. Stat. Off. 3s. 6d. 2140

The Committee was appointed by the Secretary of State for Scotland on November 1st, 1945 under the Scottish Advisory Agricultural Council for a period of three years. Amongst other references it was requested to expedite the incorporation into normal farming practice of new knowledge proved to be generally applicable; to review the problems of farmers in order to advise, in the light of current agricultural policy, on problems needing scientific investigation or increased scientific attention.

While the report largely deals with general agricultural problems such as cropping, farm management and sheep husbandry, it is impossible to divorce these from the incidence of disease.

The work of the Animal Diseases Research Association along with that of the Veterinary Investigation Officer Service, operated by the three agricultural colleges was reviewed, covering, amongst other diseases, SCRAPIE, TICK PYAEMIA, TICK-BORNE DISEASES, ENZOOTIC ABORTION of ewes, COBALT AND COPPER DEFICIENCIES, BRACKEN POISONING, LOUPING-ILL, BRAXY, LAMB DYSENTERY and SWAYBACK in lambs. The use of protective measures has brought large profits to sheep farmers, but in a number of districts prophylactics are not being used to the extent warranted by the extent of these diseases, which the committee greatly deplored, suggesting that the agricultural colleges should promote wider knowledge and interest by means of films, demonstrations and lectures.

It was recommended that further research should be carried out on the nutritional value of numerous herbage plants, mineral and other nutritional deficiencies, minerals (including trace elements) in relation to sheep metabolism, the physiology of rumination, lactation and reproduction of sheep, and on sheep dentition. Special emphasis was laid on the necessity for further research on diseases of unknown aetiology and on problems connected with their control, including TICK-BORNE FEVER, TICK PYAEMIA, SCRAPIE, " YELLOWSES ", ENZOOTIC ABORTION of sheep; further work was needed on BRACKEN POISONING in cattle, on the control of ectoparasites by the development of more effective sheep and cattle dips, and on HELMINTH INFESTATION.

The committee stated that " the veterinary services available to the hill farming industry should be extended and improved so that no hill farmer will lack the personal advice and guidance of a Veterinary Officer in dealing with problems of animal health and disease ".

—D. S. RABAGLIATI.

CANADA. (1953). Department of Agriculture. **Report of the Veterinary Director General for the year ended March 31, 1953.** [CHILDS, T.] pp. 71. Ottawa: Edmond Cloutier, C.M.G., O.A., D.S.P., Queen's Printer and Controller of Stationery. 2141

For the purpose of administering the Regulations made under the authority of the Animal Contagious Diseases Act, and the Meat and Canned Foods Act, Canada is divided into 7 districts, each of which is administered by a District Veterinarian, with an Assistant District Veterinarian and appropriate staff. The general health of Canadian livestock has remained satisfactory. The Federal-Provincial Calfhood vaccination plan for BRUCELLOSIS has proved successful. Over a million potential breeding females have now been protected. RABIES appeared on a wide front among predatory wild life in the Northwest Territories and the northern parts of four Western Provinces. A large part of the report deals with the eradication of TB. in cattle. The Section on Meat Inspection deals with animals slaughtered, and number and causes of condemnations.

—R. GWATKIN.

CANADA. (1952). Province of Prince Edward Island. **Annual report of the Department of Agriculture for the fiscal year ending March 31st, 1952.** pp. 99. Summerside, P.E.I.: The Journal Publishing Co. Ltd. [Items of veterinary interest pp. 43-64.] 2142

The Veterinary Service Report occupies 22 pages. Under the Veterinary Service Policy there are 5 practice areas and the practitioners therein responded to 4,805 calls. Calfhood vaccination against BRUCELLOSIS is available to cattle owners, as is a diagnostic and therapeutic service for MASTITIS. Reference is made to ACETONAEMIA, RETENTION OF THE PLACENTA, MILK FEVER and CALF SCOURS. VITAMIN B DEFICIENCY and SWINE ERYSIPELAS were the commonest disorders in pigs. In poultry, TB., PULLORUM DISEASE, LEUCOSIS and RESPIRATORY DISEASES come in for attention. Details of disease incidence are given in tabular form.

—R. GWATKIN.

NETHERLANDS. (1952). Mededelingen betreffende de Gezondheidsdienst voor Vee in Friesland. 33e jaarverslag, 1 Mei 1951 - 30 April 1952. [**Annual report of the veterinary Sanitary Board of Friesland 1951-52.**] pp. 77. Leeuwarden. 2143

Tuberculin testing of 39,762 cattle in 20,987 herds revealed 733 reactors which were slaughtered; 122 of these had no visible lesions when examined P.M. In three cases cattle were infected by human beings suffering from TB. (one pulmonary and two renal). A horse with pulmonary TB. infected 8 calves at pasture.

Particulars are reported of BRUCELLOSIS, LISTERIASIS, (*Erysipelothrix* (*Listeria*) *monocytogenes* infection), JOHNE'S DISEASE, STERILITY and on artificial insemination. SALMONELLOSIS in cattle was treated with chloramphenicol.—C. A. VAN DORSSEN.

BOOK REVIEWS

FAIRBROTHER, R. W. (1953). **A text-book of bacteriology.** pp. viii + 492. London: William Heinemann Medical Books Ltd. 7th Edit., revised and enlarged. 20s. 2144

During the four years since the publication of the sixth edition of this book [*V.B.* 21, 2206] there have been notable advances in chemotherapy, bacterial metabolism, and virus research. These advances are reflected in the enlargement of the chapters devoted to these subjects, and the addition of a chapter on assay methods in chemotherapy. New sections deal with the isoniazid drugs, terramycin, the use of antibiotics and the development of resistance

to antibiotics by bacteria, cultivation of viruses in the fowl embryo, Coxsackie virus, and louping-ill. Some photographs have been replaced, and there are two extra colour plates. The print is good and the quality of the paper is better than that of the previous edition.—R.M.

LAMANNA, C. [Associate Professor of Bacteriology in The Johns Hopkins University School of Hygiene and Public Health.] & MALETTE, M. F. [Associate Professor of Biochemistry in The Johns Hopkins University School of Hygiene and Public Health.] (1953). **Basic bacteriology. Its biological and chemical background.** pp. xiv + 677. London: Baillière, Tindall & Cox. 76s. 6d. **2145**

This book is intended to fill the gap between elementary textbooks of bacteriology and monographs on special aspects of the subject. It is assumed that the reader will have mastered the basic vocabulary of biology and chemistry and will have had some experience of laboratory techniques. An attempt is made to explain bacteriological phenomena, rather than merely to record their occurrence, and there is much critical discussion of selected subjects. There is a bibliography of the most important publications at the end of each chapter; some hundreds are listed.

The subjects dealt with include taxonomy, bacterial structure, microscopy, staining, surface properties of bacteria, bacterial growth, enzymes, nutrition, genetics and variation, metabolism and chemical disinfection. Some idea of the scope of individual chapters is shown by, for instance, the one devoted to bacterial variation and genetics which occupies 50 pages and includes some eighty references to published work.

For the bacterial biochemist there are four charts in a pocket at the back of the book which illustrate some of the pathways of bacterial carbohydrate metabolism.

This is a very valuable book. It deals with bacteriology as a whole, not merely with its medical or veterinary aspects. It deals with basic principles and puts forward and examines hypotheses. Ideas rather than mere facts are its subject matter. The book will be welcomed by advanced students and by teachers and research workers everywhere.—E. G. WHITE.

HAUDUROY, P., EHRINGER, GUILLOT, G., MAGROU, PRÉVOT, A. R., ROSSET & URBAIN. (1953). Dictionnaire des bactéries pathogènes pour l'homme, les animaux et les plantes. **[Dictionary of bacteria pathogenic for human beings, animals and plants.]** pp. vi + 692 + [64]. Paris: Masson et Cie. 2nd revised Edit. Fr. 1100. **2146**

The new edition of this well-known work is of larger size than its predecessor and has been improved from the ready-reference point of view by the insertion of all synonyms in their alphabetical position in the text. The book is therefore even more strictly a dictionary than in its first edition. Definitions of families and genera have been drawn in the first place by Prévot; but translations of the definitions given in Bergey's Manual of Determinative Bacteriology and in Topley and Wilson's Principles of Bacteriology and Immunity have also been included. A few old friends appear with new names, for example *Clostridium welchii* has become a genus *Welchia* with two species *W. perfringens* and *W. agni*. The latter has a type form (=*Cl. welchii* type B) and two varieties *W. agni* var. *paludis* (=type C) and var. *wilsdoni* (=type D). The title would indicate that the work was restricted to pathogenic bacteria. It includes a number of organisms of doubtful pathogenicity and some like *Aerobacter aerogenes* which are recorded as found in the alimentary tract of man and animals but not appearing to be pathogenic. Some of the species listed have descriptions such that they may never again be identified with certainty. This does not detract from the value of the work which the reviewer has considered from the appearance of the first edition the most generally-useful reference book in the bacteriological laboratory.—J. RICHARD HUDSON.

(1953). **Annual report of microbiology. Vol. VII.** [Edited by: CLIFTON, C. E., RAFFEL, S. & BARKER, H. A.] pp. x + 505. Stanford, Calif.: Annual Reviews Inc. $6.00. **2147**

The publishers have coped very well with the problem of " putting a quart into a pint pot " and can be said in this seventh volume to have placed Microbiology in the same fortunate position for reviewing as some of the older sections of biological science. The chapter headings are as follows:—Morphology of protozoa; Acid-fast bacteria; Genetics of micro-organisms; Developmental stages of viruses; Nutrition of micro-organisms; Metabolism of micro-organisms; Biochemical aspects of viral growth; Viral and rickettsial toxins; Antibiotics; Medical mycology; Amoebiasis; Helminths;

metabolism, nutrition, and chemotherapy; Food poisoning; Ecology of mosquito-borne viruses; Adrenocortical hormones in infection and immunity; The immunological response; Biological nitrogen fixation; Industrial fermentations; Microbiology of water and sewage. Each chapter is followed by a list of references. There are author and subject indexes.

—D. S. PAPWORTH.

ANON. (1954). **Cold injury. Transactions of the Second Conference, November 20 and 21, 1952, New York, N.Y.** [Sponsored by the Josiah Macy, Jr. Foundation.] [Edited by: FERRER, M. I.] pp. 242. New York: Josiah Macy, Jr. Foundation. [Demy 8vo.] $4.00. 2148

In this account of the second conference on cold injury the subjects dealt with are (1) epidemiology of cold injury in man, (2) resistance to cold, (3) pathology of cold injury, (4) suggested areas for future discussion and research.

As in the other publications in this series, the object was to bring together workers in different disciplines to promote exchange of ideas and the discussions are reported *verbatim*.

—M.C.

BROWNING, E. (1953). **Toxicity of industrial organic solvents. (Revised in consultation with the Toxicology Committee.)** pp. viii + 411. Medical Research Council. Report No. 80. (Revised Edit., 1952.) London: H.M. Stat. Off. 35s. 2149

The first edition of this report was published in 1937. This second edition retains its original form, being a compendium of information on substances used primarily as solvents, rather than a critical review of published literature. It has been revised and enlarged to include solvents which have come into use since the first edition was prepared. It deals with the toxicology of such compounds in animals and in human beings.

There are ten main chapters, each followed by a bibliography:—121 pages dealing with hydrocarbons, 180 with chlorinated hydrocarbons, 59 with alcohols, 20 with ethers, 29 with esters, 20 with ketones, 24 with glycols and their derivatives, eight with amines and coal tar bases, seven with nitro-compounds, and a miscellaneous chapter of 22 pages. There is a subject index.

The book is carefully laid out, with a good and more attractive binding than is usually associated with official publications.

—D. S. PAPWORTH.

CANNON, W. B. [George Higginson Professor of Physiology in Harvard University.] (1953). **Bodily changes in pain, hunger, fear and rage. An account of recent researches into the function of emotional excitement.** pp. xvi + 404. Boston: Charles T. Branford: London: Bailey Bros. & Swinfen Ltd. 2nd Edit. 32s. 2150

This is a reprint of the 1929 edition.

ANON. (1953). **Annual review of physiology. Vol. XV.** pp. ix + 558. Stanford, Calif.: Annual Reviews, Inc. $6. 2151

This fifteenth volume of this well-known annual review lives up to the excellent reputation founded by its predecessors. The style and presentation follow the usual familiar pattern and the particular fields of physiology are covered by authoritative workers on their respective subjects. Some thought must soon be given given, however, as to how long the book may be termed a review of the whole of physiology, and whether it might not be better to review one section every other year, and hence widen the scope of work covered whilst losing a little on the up-to-date nature of the bibliography. The chapter headings are:—Transport through biological membranes; Developmental physiology; Electrical activity of the brain; Water metabolism; Respiratory system; The digestive system; The innervation of skeletal muscle; Blood volume maintenance and regulation; Blood: formed elements; Peripheral circulation; Heart; Excitation and conduction in the nervous system; Somatic functions of the central nervous system; Visceral functions of the nervous system; Special Senses, thermal receptors; Physiology of vision; The anterior pituitary and adrenal cortex; Reproduction; Comparative physiology of invertebrate endocrines; Liver; Higher functions of the nervous system. Each chapter is followed by a list of references and there are author and subject indexes.

—D. S. PAPWORTH.

ANON. (1953). **Connective tissues. Transactions of the Fourth Conference, February 18, 19 and 20, 1953, Princeton, N.J.** [Sponsored by the Josiah Macy, Jr. Foundation.] [Edited by: RAGAN, C.] pp. 197. New York: Josiah Macy, Jr. Foundation. [Demy 8vo.] $3.75. 2152

The book starts with a discussion covering the work dealt with in the preceding three conferences on connective tissues in an attempt to define "areas of agreement" and a tabular outline of the ramifications of the subject helps the reader to get some insight into its complexity. This is followed by discussion of three topics, namely:—Isolation and characterization of mammalian striated myofibrils; The effect of vitamin A on organ cultures of skeletal and other tissues; and Outline of problems to be solved in the study of connective tissues. Each section has a list of references to recent work and there are some excellent illustrations, many of them electron micrographs of muscle fibrils.

—M.C.

ANON. (1953). **Ciba Foundation colloquia on endocrinology. Vol. VII. Synthesis and metabolism of adrenocortical steroids.** [Edited by: WOLSTENHOLME, G. E. W.] pp. xviii+297. London: J. & A. Churchill Ltd. 30s. 2153

This book is a report of the lectures and discussions presented at the seventh of this series of colloquia on endocrinology, held in June 1952. To those engaged on endocrinological research this volume is a gold-mine of information and references. Those who presented papers are the giants of the endocrinological world, and the fields covered ranged from pure synthetic organic chemistry of the steroids to their biogenesis and behaviour in the living world. There is a note on nomenclature with a table giving the empirical formulae, the systematic names and the trivial names. Part I deals with the synthesis of adrenocortical and related steroids and Part II with metabolism of adrenocortical steroids.

—D. S. PAPWORTH.

PINCUS, G. [Edited by.] (1953). **Recent progress in hormone research. The Proceedings of the Laurentian Hormone Conference. Vol. VIII.** pp. 603. New York: Academic Press Inc.; London: Academic Books Ltd. $10.80. 2154

This book reflects the continued interest in the corticosteroids, to which two of the four sections are given. The first section deals with their analysis, assay, and synthesis from plant tissues. The second is the record of a symposium on adaptation diseases with emphasis on the clinical aspects of Selye's concepts.

The third section deals with progesterone metabolism, the biochemistry of relaxin, foetal endocrinology and the response of uterine metabolism to the steroids. The last section concerns growth hormone, and the regulation of carbohydrate and fat metabolism.

There is a good index. Printing, paper and binding are of the usual high standard of the publishers and there are few errors.

—A. SEAMAN.

LUCK, J. M., LORING, H. S. & MACKINNEY, G. [Edited by.] (1953). **Annual review of biochemistry. Vol. XXII.** pp. ix+729. Stanford, Calif.: Annual Reviews Inc.; London: H. K. Lewis & Co., Ltd. $6.00. 2155

This volume contains a prefatory chapter by E. V. McCollum and 22 reviews comprising:—Biological oxidations, by E. C. Slater; Proteolytic enzymes, by K. Linderstrøm-Lang and K. Max Møller; Nonoxidative and nonproteolytic enzymes: Glycosidases, by S. Hestrin; Chemistry of the carbohydrates, by H. S. Isbell and H. L. Frush; Chemistry of the lipids, by T. P. Hilditch; Nucleic acids, purines and pyrimidines, by G. B. Brown; Carbohydrate metabolism, by L. F. Leloir and C. E. Cardini; Lipid metabolism, by C. Artom; Metabolism of amino acids and proteins, by H. N. Christensen; The chemistry of cortisone, by C. W. Shoppee; Nutrition, by A. G. Hogan; The chemistry of neoplastic tissue, by C. J. Kensler and M. L. Petermann; The biochemistry of teeth, by H. M. Leicester; Immunopolysaccharides, by J. Tomcsik; Chemistry of the fungi, by J. H. Birkinshaw; Ruminant nutrition, by C. F. Huffman; Photosynthesis, by A. H. Brown and A. W. Frenkel; Biochemistry of antibiotics, by B. M. Duggar and V. L. Singleton; The biochemistry of vision, by G. W. Wald; Fat-soluble vitamins by C. A. Baumann; Water-soluble vitamins, by O. A. Bessey *et al.*; and Chemistry of amino acids, peptides and proteins, by Cl. Fromageot and M. Jutisz.

The author of the prefatory chapter was asked by the Editorial Committee to describe "his own experiences as a student, a teacher and an investigator": accordingly he gives a most interesting account which covers his earliest experiences in the study of nutrition in the years 1907-17 and the animal feeding tests which ultimately led to the finding of the factor now known as vitamin A, in butter fat, the aetiology of beri-beri, of scurvy and its prevention and cure, and the confirmation, extension and unification of these findings.

In this volume more space than hitherto

has been devoted to the subject of vitamins. There are good author and subject indexes.

—E. Marsh Jones.

Sacks, J. [Associate Professor of Chemistry, University of Arkansas, Fayetteville.] (1953). **Isotopic tracers in biochemistry and physiology.** pp. vii+383. New York, Toronto & London: McGraw-Hill Book Co., Inc. 68s. 2156

The author discusses the principles involved in the use of isotopic tracers and describes major accomplishments that have resulted from their application to biochemistry and physiology, especially of mammals; limitations inherent in their use are discussed. Broad outlines of the methods used and the results obtained are indicated. The valuable subject matter is arranged in 16 chapters, covering for example, the elements of nuclear physics and radio-activity, and the principles of measurement; movement of ions across phase boundaries; metabolism of fatty acids, phospholipids, and steroids; and radio-active iodine and the thyroid. There is an appendix summarizing the commonly used tracers, followed by author and subject indexes.

—E. Marsh Jones.

Hellich, H. & Störiko, K. R. [Revised by.] (1953). Die Deutsche Tierseuchengesetzgebung nebst Ausführungsbestimmungen. **[Legislation on diseases of animals in Germany.]** pp. 980. Berlin & Hamburg: Paul Parey. 2nd Edit. DM 72. 2157

Changed conditions following the second world war necessitated the publication of this second revised edition of the work which first appeared in 1940 and to which a supplement was issued in 1941.

There are chapters dealing with the Viehseuchengesetz [animal epidemics law] of June 26th, 1909, supplementary legislation in respect of diseases which are not notifiable, regulations governing compensation, disposal of carcasses, disinfection of railway cattle trucks, control of rinderpest and explanatory notes regarding legislation in respect of notifiable diseases. Quite a number of regulations have been revised, enlarged or added since the first publication of this work, namely on control of bovine TB., foot and mouth disease, swine fever, fowl pest, diseases of bees, equine encephalomyelitis, tularaemia, transit and transport of animals etc.

The book is well indexed and print, paper and binding are of good quality.—E.G.

Küst, D. [Ordinarius für tierärztliche Geburtskunde.] & Schaetz, F. [Dozent für tierärztliche Geburtskunde.] (1953). Fortpflanzungsstörungen der Haustiere. **[Reproductive disorders of domestic animals.]** pp. viii+235. Stuttgart: Ferdinand Enke. 2nd revised edit. DM 19 & DM 22. 2158

This is the second revised edition of the work first published in 1949 [*V.B.* **20**, 1857]. Although the general layout of the subject matter has been retained, the lists of references at the ends of chapters—a useful feature of the first edition—have been omitted. Sections on sterility in cattle and bovine venereal infections have been revised and considerably enlarged. The number of illustrations has been increased by 25, to 80, and the number of pages by 28. The book is very well produced.—E.G.

Gray, A. P. (1954). **Mammalian hybrids. A check-list with bibliography.** pp. x+144. Farnham Royal: Commonwealth Agricultural Bureaux. Technical Communication No. 10 of the Commonwealth Bureau of Animal Breeding and Genetics, Edinburgh. [Royal 8vo.] 21s. 2159

Records of hybrids between species and subspecies have been collected from the literature and listed under the various orders and families of mammals with, in many cases, short notes some of which are based on unpublished material contributed by zoologists from many parts of the world. There is much duplication since the reciprocal crosses, where such have been recorded, are listed separately, for example, under the genus *Felis* the cross between the domestic cat and the jungle cat is listed twice depending upon whether the male parent was the domestic cat or the jungle cat.

Most of the crosses have occurred in captivity as interspecific hybridization apparently occurs very rarely in nature.

There is a bibliography and an index of species.—M.C.

Bett, W. R. (1953). **The preparation and writing of medical papers for publication.** pp. 28. London: Menley & James, Ltd. 2nd Edit. 2160

This booklet, now in its second edition, is the text of an address given by the author to postgraduates and others under the auspices of the British Postgraduate Medical Federation.

The author points out that nowadays too little attention is paid to style in medical writing. He draws a clear distinction between technical jargon—the use of which is sometimes unavoid-

able—and composition jargon the use of which is inexcusable. He gives sound advice on the essence of style in writing.

He gives much useful information on bibliographical tools; advice on the choice of titles; arrangement; the setting out of references; illustrations; and final counsel on the preparation and revision of manuscripts.

There is an appendix on " Changing styles of English prose " and another comprising a selected list of names of journals and abbreviations from the World List of Scientific Periodicals.

The booklet is well and attractively printed on excellent paper and adequately bound for its size.—F.E.W.

BOOKS RECEIVED

[Notice of recently received books in this list does not preclude review.]

BARNETT, A. J. G. (1954). **Silage fermentation.** pp. x+208. London: Butterworths Scientific Publications; New York: Academic Press Inc. [Demy 8vo.] 27s. 6d.

CONISBEE, L. R. (1953). **A list of the names proposed for genera and subgenera of recent mammals from the publication of T. S. Palmer's ' Index Generum Mammalium ' 1904 to the end of 1951.** pp. 109. London: British Museum (Natural History). 20s.

DUJARRIC DE LA RIVIERE, R. & EYQUEM, A. (1953). Les groupes sanguins chez les animaux. (Individualités sanguine et tissulaire.) **[Blood groups in animals.]** pp. 407. Paris: Les Éditions Médicales Flammarion. Fr. 3275.

DUMAS, J. (1953). Les animaux de laboratoire. Anatomie, particularités physiologiques, hématologie, maladies naturelles, expérimentation. **[Laboratory animals.]** pp. 719. Paris: Editions Médicales Flammarion. [Royal 8vo.] Fr. 3725.

EDGSON, F. A. & GWYNNE-JONES, O. (1954). **First-aid and nursing for your dog.** pp. 118. London; Melbourne; Sydney; Auckland; Bombay; Cape Town; New York & Toronto: Popular Dogs Publishing Co., Ltd. [Crown 8vo.] 7s. 6d.

KARPOVICH, P. V. (Originally by: SCHNEIDER, E.C.) (1953). **Physiology of muscular activity.** pp. xi+340. Philadelphia & London: W. B. Saunders Co. 4th Edit. [Demy 8vo.] 24s.

LURIA, S. E. (1953). **General virology.** pp. xiii+427. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Ltd. [Demy 8vo.] 68s.

LÉPINE, P. & SOHIER, R. (1954). Techniques de laboratoire appliquées au diagnostic des maladies à virus. **[Laboratory diagnosis of virus diseases.]** pp. 479. Paris: Masson et Cie. Fr. 2400.

MACKENZIE, P. Z. & SIMPSON, R. M. (1953). **The African veterinary handbook.** pp. xi+260. Nairobi & London: Sir Isaac Pitman & Sons, Ltd. [Crown 8vo.] 15s.

SAVORY, T. H. (1953). **The language of science. Its growth, character and usage.** pp. 184. London: Andre Deutsch Ltd. 10s. 6d.

ANON. (1953). **The Faber medical dictionary.** [Edited by: WAKELEY, C.] pp. vii+471. London: Faber & Faber, Ltd. [Post 4to.] 45s.

ANON. (1953). **Antibiotics annual 1953-54. Proceedings of the Symposium on Antibiotics, October 28, 29 and 30, 1953, Washington, D.C.** (Sponsored by U.S. Department of Health, Education, and Welfare, Food and Drug Administration, Division of Antibiotics. In collaboration with the Journal *Antibiotics & Chemotherapy*.) [Edited by: WELCH, H. & MARTÍ-IBÁÑEZ, F.] pp. viii+632. New York: Medical Encyclopedia, Inc. [Royal 8vo.]

ANON. (1953). **Bibliography of the literature on the minor elements and their relation to plant and animal nutrition.** pp. 117. New York: Chilean Nitrate Educational Bureau, Inc.; London: Nitrate Corporation of Chile, Ltd., Agricultural Service. Vol. III. 4th Edit. [Demy 4to.] Not for sale.

Printed in Great Britain by CHARLES BURRELL & SON, Chertsey

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ERRATUM

In this issue, page 381, abst 2400, for "ADBUSSALAM, M.", please read "ABDUSSALAM, M."

ABBREVIATIONS OF NAMES OF PUBLICATIONS

The abbreviations used in *Index Veterinarius* and *The Veterinary Bulletin* are those of the *World List of Scientific Periodicals* published in the years 1900-1950, 3rd Edit. (1952). London : Butterworths Scientific Publications.

The Executive Council of the Commonwealth Agricultural Bureaux is a signatory to the Fair Copying Declaration, details of which can be obtained from the Royal Society, Burlington House, London, W.1.

Bulletins on disease subjects written for farmers and "popular" articles of a similar nature are not included in the *Veterinary Bulletin*. Those of a sufficiently important nature are, however, included in *Index Veterinarius*; so also are certain review articles, presidential addresses, congress proceedings, etc., where the title conveys as much information as could be given in an abstract of a few lines. For information of this nature, readers of the *Veterinary Bulletin* are referred to *Index Veterinarius*, where titles of all publications indexed by the bureau are fully cross-referenced.

A list of annotations and reviews, classified according to subject, is now given in *Index Veterinarius*, being inserted at the end of each number. Such papers will not necessarily be dealt with in the *Veterinary Bulletin*.

The Editor will be glad to receive publications relating to Veterinary Science and cognate subjects in order that they may be dealt with in the *Veterinary Bulletin*.

Reports of Departments, Special Reports, reprints, etc., etc., should be sent as soon as they are issued.

Books for Review.

The Editor will be glad to receive books for review in the *Veterinary Bulletin*.